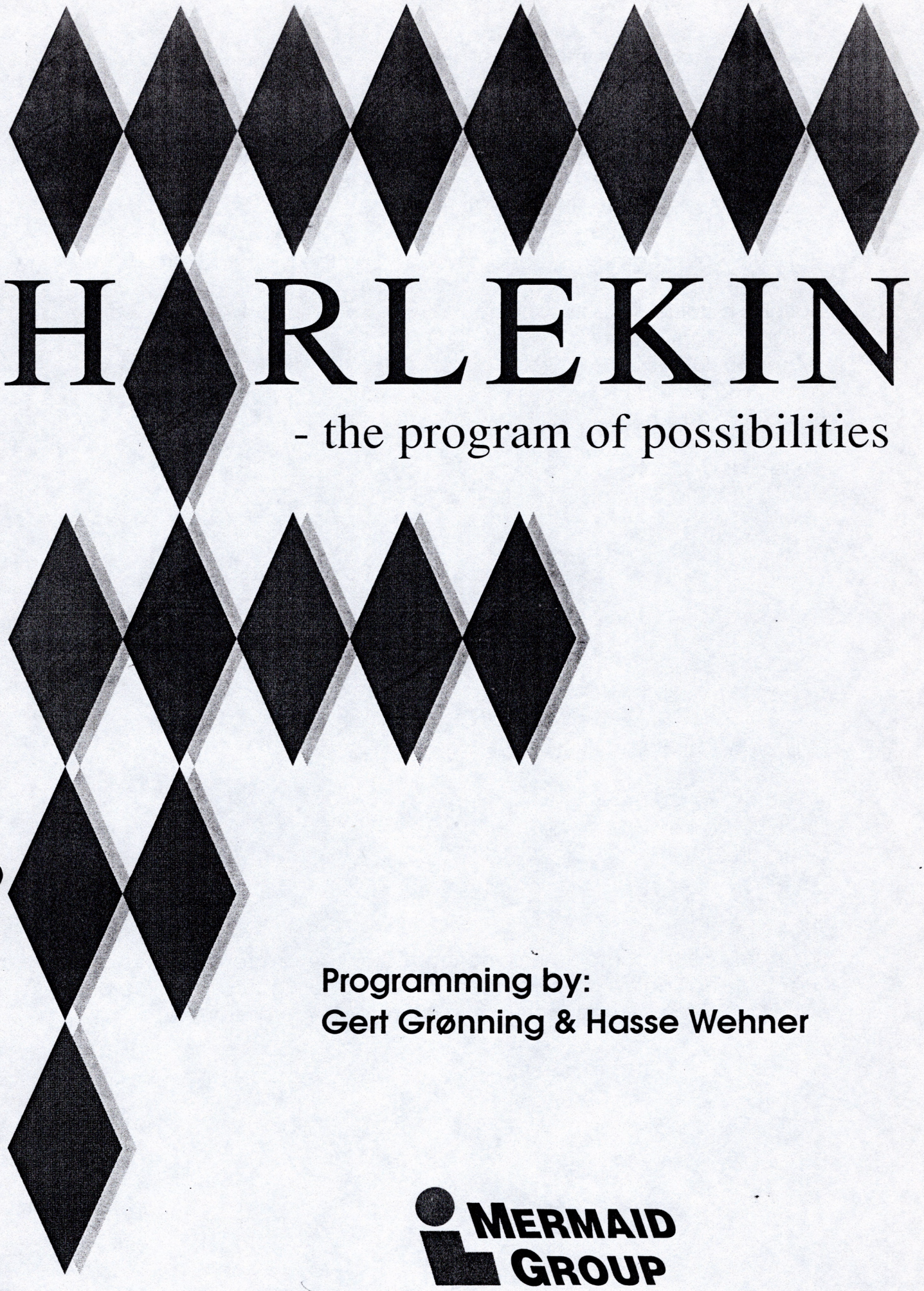

HARLEKIN

- the program of possibilities

Programming by:
Gert Grønning & Hasse Wehner

MERMAID GROUP

Contents

Harlekin: The Program of Possibilities

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Welcome to Harlekin

Atari ST users who work with large programs and hard disks know that there are always ten different tasks to carry out within a single work session. This calls for at least ten different programs. You are constantly going back and forth to the desktop to start a new program, wait for it to load, do the job, exit, and on to the next program etc. If you are inside a large program, such as Calamus, then this can take a long time.

Harlekin is a new kind of program. It's actually eighteen different programs. These are integrated to a large degree so that many of the parts of Harlekin work together.

Harlekin is always there. The program is RAM resident. This means that it is read once from disk into the RAM memory; if you start a Harlekin module, it appears instantly - there is no waiting for it to load from disk.

You can always find Harlekin by using the **Desk** menu. A program in the **Desk** menu can be accessed from within a GEM program at any time; Harlekin is not a desk accessory, it just uses the accessory menu.

The main parts of Harlekin are the wordprocessor, the scrapbook, the disk editor, and the terminal program.

The wordprocessor has all of the standard editor functions and is extremely fast. It is intended for writing documents quickly. It can print out; but we find that most users will prefer to print with SIGNUM or CALAMUS, these provide a better print.

The scrapbook is the centre of Harlekin. You can create cards or notes which are unlimited in size. The scrapbook has its own full-function wordprocessor. You can mark the notes with your own icons. These cards can be shown as a list or as a calendar. Various search buttons let you sort out the notes. The scrapbook is a information management system which uses windows, icons, and the mouse.

The disk editor works on disks, files or memory. You can change programs directly. The disk editor is very complete, very fast, and has features not available elsewhere.

And lastly, the terminal program. At any point, you can send or receive a file using a modem. With a modem, your computer is connected by the telephone line to the rest of the world.

An example of using Harlekin; while working in Calamus, you can use the wordprocessor to load a document from disk, add to it, and make corrections. It can then be moved directly into Calamus. The Harlekin wordprocessor is much faster and more complete than the Calamus editor. You can keep track of documents by using the scrapbook; as you work on a document, you can change its icon from "rough draft" to "final version" and then move it into Calamus. And when you finish the layout in Calamus, you can then send the file directly to the photosetting company's computer by using the terminal program. All of this can be done without exiting Calamus.

There are more programs inside Harlekin. Programs to format disks, copy disks, set up and control your printer, a calculator, an ASCII table, macro programs, a RAM disk, clock, reminders, printer spooler, and a control panel. All sorts of programs which help you while working with other programs.

All of Harlekin has been tested, re-ested, re-designed, and re-programmed countless times. New versions were created nearly twice a week, with new changes, ideas, improvements. Poor ideas were improved or removed. Hasse Wehner and Gert Grønning wanted to make a program which will be used.

To make Harlekin as useful as possible, all important functions can be reached by using the mouse or keyboard shortcuts. Nearly everything in Harlekin can be set up and saved to your style and needs. The configuration program lets you change everything.

Introduction

When you select Harlekin from the **Desk** menu, the Harlekin menu appears:

The Harlekin modules are placed in order of importance on the menu. The wordprocessor, the scrapbook, the printer filter and the communications program are in the first row. The second row is related: an ASCII table, a calculator, a monitor, and a macroprocessor. The third row mostly has to do with files and drives: a file utility, a disk copy/format, and a RAM disk. The clock is at the end. The fourth row is system-related: RS232 port definition, spooler/printer settings, control panel, and system status information.

Harlekin uses consistent rules throughout the modules:

At the top of the screen, Harlekin always reports the current action or command. If you are saving a file, for example, Harlekin tells you which commands you are using.

Double-clicking in the slider box's up or down arrows will bring the scroll bar completely to the top or bottom.

Horizontal slider boxes: the slider can be moved by clicking the mouse in the right or the left arrow. If you hold down the mouse button, the box scrolls along. The box can be dragged, as in all GEM applications.

Menu Bars: the Harlekin menus drop down only when you press the mouse. They do not drop by themselves. To select an option, keep the mouse button pressed down, point at the selection, and release the mouse button. The highlighted option will be selected.

Buttons: a message box (such as the file selector window) has several areas in it where you can click with the mouse. These are called *buttons.* You will note that some buttons have darker borders. These are *default buttons;* if you press `Enter` or `Return`, it has the same effect as clicking these buttons. Harlekin uses default buttons in nearly all situations where we assume that you will say "yes".

Pressing `Control` + `Undo` will close almost all Harlekin windows.

Selected/Unselected: in its normal state, an icon is white. For example, your disk drive icons are usually unselected. If you point at a drive icon and click once, it becomes selected. It turns black. Or, its colours are inverted. When an icon is selected, its properties become available: if it is a disk drive, you can open it, if it is a file, you can edit its name with `Show Info...` from the desktop `File` menu.

Search/Repeat Search: these commands have the same keys throughout; you can always use search by pressing `Control` + `F` (Find). You can repeat the search by pressing `Alternate` + `F`.

Bookmarks: in several modules, you can place *bookmarks.* Later, pressing a key will bring the cursor back to that bookmark. To set a bookmark, place the cursor and press `Control` + `1`, `2`, `3`, or `4` (the numbers above the keyboard). To return to a bookmark, press `Alternate` + `1`, `2`, `3`, or `4`. The bookmarks are reset-proof (but they are not stored with the text). Each module has its own bookmarks.

Printing and Page Layout: the Page Layout box in the editor, the Scrapbook, and the monitor work in the same way. Each one is independent of the other; you can have separate layouts in each one.

ST Keys: Control, Alternate, and Shift keys are called *major* keys; the remaining keys are called *minor* keys (such as a, s, d, f, etc.) The F-keys (function keys) are the series of slanted keys at the top of the keyboard. There are two sets of number keys. One is above the alphabet (under the Function keys). The other is called the *numeric keypad;* this is on the right side of the ST.

Multiple key presses: with Harlekin, you will often press various keys simultaneously. Always press the major key first, hold it down, then press the minor key, and then release both. For example, pressing `Control` + `Undo` closes a window. To do this: press the `Control` key down. Hold it down. Now, press the `Undo` key and release both.

The mouse: there are various mouse rules: press the mouse's left button once for a click; press twice rapidly for a double-click. Press the mouse's button down, hold it down, and move the mouse to *grab and drag* an object. The tip of the arrow is called the *hot point*; to point the arrow, make sure that the tip is touching the object that you want to select. The body of the arrow or the shaft has no effect.

Screens: with most Harlekin modules, such as the text editor, you can open a window and work with a document and still have access to the desktop disk drive and wastebasket icons. You can still use the ST desktop menus. Harlekin lets you open up to seven windows at one time.

Buffers: Harlekin uses several *buffers*. A buffer is a small part of the RAM memory which is used as a temporary holding space. The printer spooler (**Chapter 14**) is a buffer.

Bombs and Reset-Proofing: poorly written programs often have internal problems. Commands conflict with each other; situations arise which the programmer didn't foresee. The ST reacts by *bombing* (small bomb icons appear on the left side of the screen) or *freezing* (everything stops and there is no response). In very bad cases, the computer resets itself. When the ST bombs, you must reset the computer. This clears the memory and starts things again. For you, this means that you lose whatever you were doing. Your text disappears. You need to reload the programs and start all over again.

Harlekin is especially helpful with bombs. It is the only program for the ST which is entirely reset-proof. If you bomb in a program, such as Calamus, then you press the reset button; Harlekin shows up again. Better yet: none of the files or current working material is lost. And even better than that, it places you right back where you left off.

Extensions: an extension is the three character "last name" to a file: `DOC` is the extension for Wordplus files (`TEXT.DOC`). Although we use several standard extensions in Harlekin, you can use your own extensions. Keyboards are called `DENMARK.KEY`, `USA.KEY` etc., but you can use any extension you like.

Compatibility

Harlekin is compatible with nearly all ST programs. Harlekin works as a desk accessory and therefore programs which don't use GEM menus will not allow you to use Harlekin. Certain programs can cause difficulties. Older versions of Redacteur, the French word processor, use many of its own macros. Harlekin's macros are therefore blocked.

System requirements

Harlekin runs on all STs regardless of size. Smaller STs, however, will need to tailor the amount of memory which is assigned to each module. Harlekin runs on floppy disk systems, both single-sided and double-sided, and hard disk systems. Harlekin also runs on both colour and monochrome screens. Harlekin runs on all versions of TOS.

Harlekin supports the Atari SM194 and Moniterm large screens but you must have the **RESETMEM.PRG** program as the first program in your **AUTO** folder to work with such screens.

Harlekin does not require a printer. It can print on 9 pin, 24 pin, and laser printers.

The Harlekin spooler conflicts with the Atari laser printer. It won't be able to print. Turn off the spooler or do not install it.

Working copy of Harlekin

The developers and distributors of Harlekin are professional ST users. We know that copy-protected disks are a bother. Users must be able to make backups and work disks. Harlekin is not copy protected.

Harlekin has a serial number. It is stamped on your disk and is in your program. We will only support registered users of Harlekin.

Distributing programs without permission is a violation of our copyright. A enormous amount of hard work and financial investment went into this program. Please don't hand out copies of our program.

For safety, you *must* make a work disk of Harlekin. Store your original Harlekin disk in a safe place away from electrical equipment, water, fire, ice, or babies. Never move the write protect tab on your original disk.

Harlekin is supplied on a double-sided disk; please contact your supplier if you require a single-sided version.

Use the Atari desktop to back up your Harlekin disk:

- Boot your Atari ST and, when it has booted and the desktop appears, insert a new, blank disk into drive A, select the **FLOPPY DISK A** icon by single-clicking on it (so it turns black) and choose **Format...** from the **File** menu. Format the disk as a single- or double-sided disk depending on your Harlekin master disk.

- When the format is complete, double-click on the **FLOPPY DISK B** icon on the desktop and insert your Harlekin master disk. Now, click on the **FLOPPY DISK B** icon and, keeping the mouse button held down, drag the **B** icon on top of the **FLOPPY DISK A** icon (until it turns black). Release the button and follow the instructions to make your working copy.

From your work disk, you can remove the files which you rarely use: in fact, the only necessary files are the **HARLEKIN.ACC**, the **HARLEKIN** folder, and the files **HARLEKIN.DEF** and **HARLEKIN.RSC**. If you use the scrapbook, then you must also have **HARLEKIN.SCP**. But, before you delete any files from your work disk, read the next section so that you know what files do which jobs.

Harlekin replaces your Atari control panel. The **CONTROL.ACC** can be deleted from your boot disk. You will find that Harlekin replaces many of your major programs, accessories, and practically all of your tools.

Installation of Harlekin

Your Harlekin disk contains the following files:

HARLEKIN.ACX

The mono (black and white) version of the Harlekin program. This should be in your root directory, that is, outside of any folders and on your main disk. This is suitable for monochrome screens. If you have a monochrome screen, remove **HARLECOL.ACC** from your working disk and rename **HARLEKIN.ACX** to be **HARLEKIN.ACC** on your working disk. If you have a colour screen remove **HARLEKIN.ACX** from your working disk.

HARLECOL.ACC

The colour version of the Harlekin program. This should be in your root directory, that is, outside of any folders and on your main disk.This is suitable for colour screens. If you have a colour screen, remove **HARLEKIN.ACX** from your working disk. If you have a monochrome screen, remove **HARLECOL.ACC** from your working disk and re-name **HARLEKIN.ACX** to be **HARLEKIN.ACC** on your working disk.

INSTAL_C.PRG

A program for easy installation of Harlekin on your hard disk, assuming this is drive C. It copies the essential files and creates a **HARLEKIN** folder for you.

INSTAL.BAT

The commands that **INSTAL_C.PRG** obeys. You can edit this file with the editor to change your installation sequence.

PATCH.PRG

A program for non-auto-booting hard disks. If your hard disk cannot auto-boot, you will need to tell Harlekin where to find its **RSC** and **DEF** files. Do this by running **PATCH.PRG** and, when prompted, enter the drive letter of your hard disk (e.g. **C**).

README.TXT

The latest changes to Harlekin that cannot be included in the manual. *Please read this with the editor ... NOW!*

In a folder called **AUTO**, there are:

RESETMEM.PRG

You need this in your **AUTO** folder if you are running Harlekin with a large screen such as the Atari SM194 or Moniterm screens. In this case, **RESETMEM.PRG** must be the *first* file in your **AUTO** folder. To ensure that it is: create a folder called **OLDAUTO**, move all the files from your **AUTO** folder to the **OLDAUTO** folder (thereby emptying **AUTO**), copy **RESETMEM.PRG** to your **AUTO** folder, copy all the other files from **OLDAUTO** into **AUTO** and delete the **OLDAUTO** folder. If you do not have a large screen remove **RESETMEM.PRG** from your **AUTO** folder.

STEFIX.PRG

If you have an STE computer, place this in your **AUTO** folder.

In a folder called **HARLEKIN**, there are:

CONFIG.PRG
The configuration program. This sets up the size and nature of the various Harlekin modules. See Chapter 14 for details.

CONFIGH.RSC, CONFIGM.RSC
Resource files for the configuration program.

HARLEKIN.DEF, HARLEK_C.DEF
Your Harlekin settings. This is changed by using the configuration program or when you save your settings. If you have a colour screen, delete **HARLEKIN.DEF** and rename **HARLEK_C.DEF** to be **HARLEKIN.DEF** on your work disk. If you have a monochrome screen, delete **HARLEK_C.DEF** from your work disk.

HARLEKIN.RSC, HARLECOL.RSC
The resource files to Harlekin.

HARLEKIN.SCP
The files and settings for your scrapbook.

HARLEKIN.MAC
The macro keys.

HARLEKIN.RMD
Configuration information for the Harlekin RAM disk. Do not use with another type of RAM disk.

MAC.FNT, IBM16.FNT
Files which end with **FNT** are fonts.

FINLAND.KEY, DANMARK.KEY, SWEDEN.KEY, GERMAN.KEY, UK.KEY, USA.KEY
Files which end with **KEY** are the different keyboard layouts for various languages.

NORM_24P.HEX, NORM_9P.HEX
A printer file for your 24 pin Printer.
A printer file for your 9 pin Printer.

HEXINFO.TXT
Information about Printer driver files.

There may be other files.

Note that in contrast to other programs, the **RSC** file is in the Harlekin folder. All of the Harlekin sub-files are kept in the Harlekin folder.

The **SCP**, **MAC**, **KEY** files do not have to have the name **HARLEKIN**. You can create your own keyboards, macro keys, and scrapbooks and call these **KAREN.KEY**, **LISBETH.SCP**, and **MONA.MAC**. The **DEF** file may also have different names. However, the **DEF** file which is called **HARLEKIN.DEF** will be automatically loaded when you start your ST.

To start Harlekin

Turn off the computer and wait one second for each 100 kilobytes (i.e. five seconds for a 520ST, 20 seconds for a 2MB ST). Turn on the computer and insert the Harlekin work disk or allow your machine to auto-boot from your hard disk. Harlekin installs itself as an accessory and reads the necessary files from the Harlekin folder.

Loading Harlekin

Harlekin takes time only when loading. Since it is RAM resident, actually using Harlekin is instant. To reduce the loading time, just don't turn off the ST. You can leave your ST turned on for long periods of time.

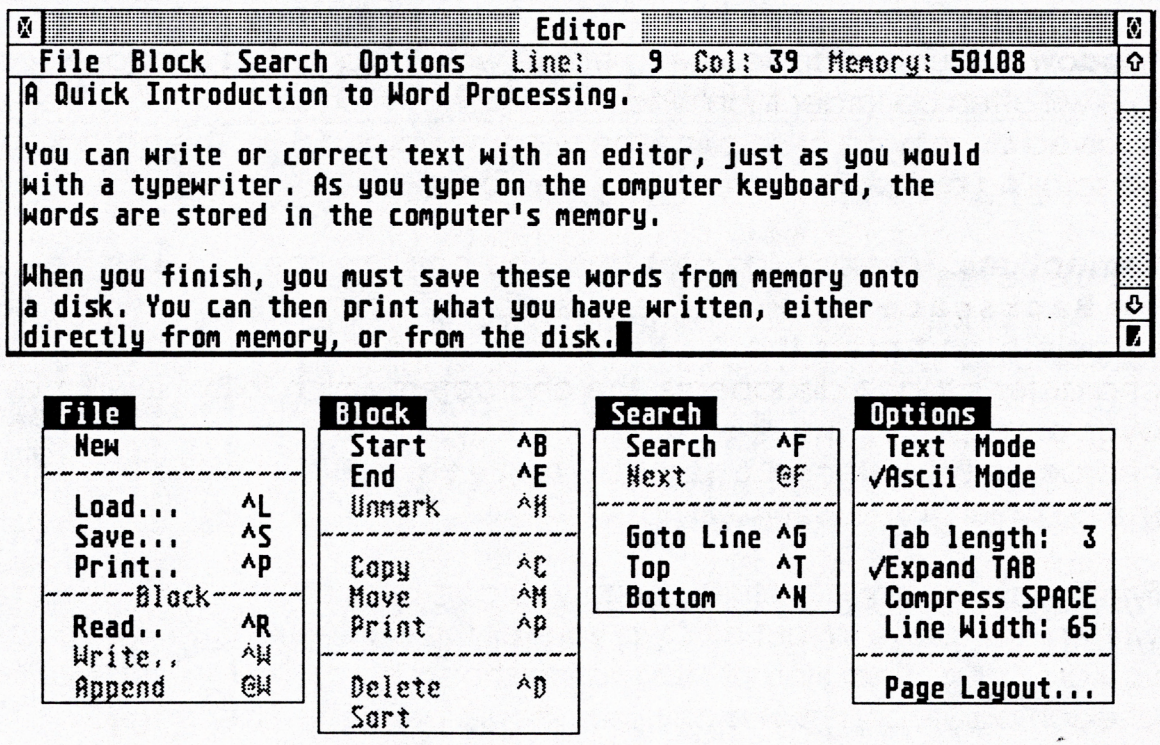
Editor

Summary

- The Harlekin text editor is a complete text program.
- You can write, edit, and print a document.
- You can use many block and search/replace options.
- With the macro processor, you can add an unlimited amount of keyboard commands to the text editor.
- The size of the text is limited only by available RAM.

Further abilities

- Automatic, quick reformatting.
- Complete block, search, and replace functions.
- Fast search, replace, and scrolling.
- Sorting of text.
- Wildcards and jokers available when searching.
- Prints page numbers, footers, and headers with file information.



A Quick Introduction to Wordprocessing

You can write or correct text with an editor, just as with a typewriter. As you type on the computer keyboard, the words are stored in the computer's memory. When you finish, you must save the words from the memory onto a disk. You can then print the document from the memory or the disk. You can always load text from the disk into the editor to write additional text or make changes.

The cursor: An important part of a wordprocessor is the cursor. It points out your current writing position on the screen. When you press a key, the character appears at the cursor's position. The cursor then moves to the next position and waits for the next character. With the mouse or the cursor arrows, you can place the cursor anywhere on the screen so that you can write new words or delete other ones.

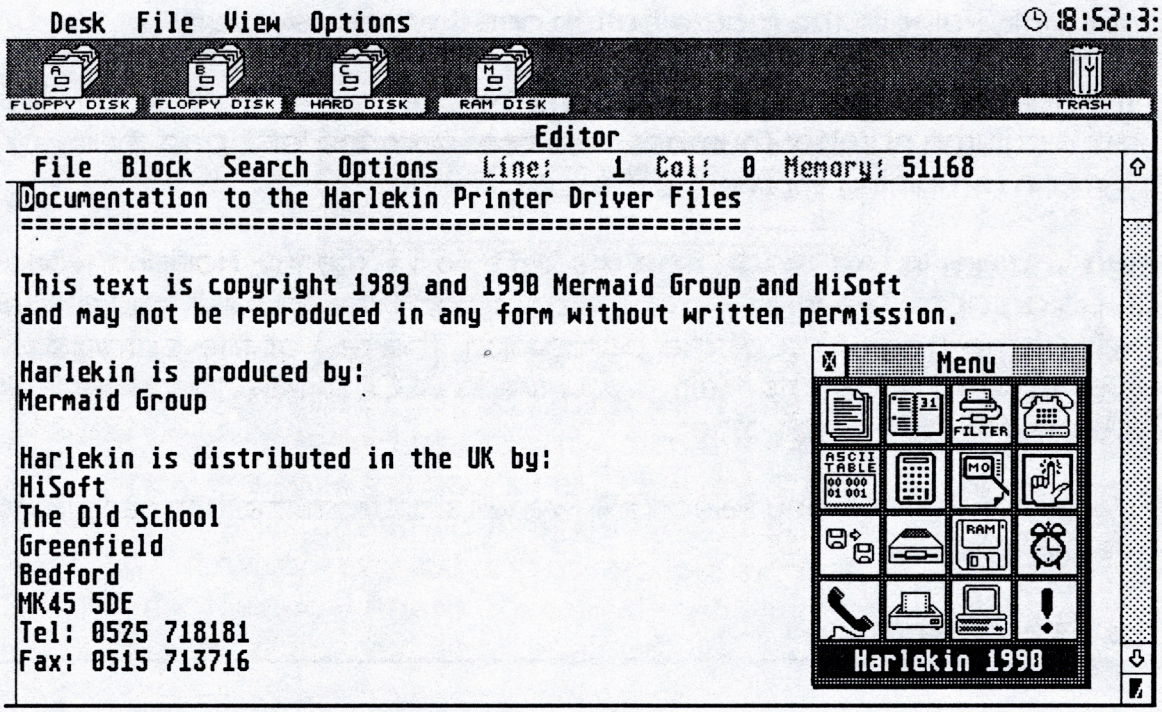
When you are writing and get to the end of a line, you don't need to press the `Return` key as you would with a typewriter. The editor automatically moves the cursor to the next line (however, only if the editor is in text mode). You press the `Return` key only if you want to end a paragraph and start a new paragraph. You can also press the `Return` key to create several blank lines. Automatic reformatting of the paragraph happens only if you are in text mode.

Windows: Your text appears in a frame which is called a *window*. Your text will often be larger than what can be shown on screen. This problem is solved by moving or *scrolling* the window up or down. The paragraph on scrolling explains how to do this (see below).

Corrections: To erase (delete) text, you can use the `Delete` key or the `Backspace` key. Place the cursor on the character which you wish to delete and press the `Delete` key. It disappears. Note that the character's space disappears; the characters which follow it will move over one space. The `Backspace` key will delete the preceding character. By pressing `Control + Delete`, you can erase the entire line on which the cursor is resting.

Printing: If you have a printer, then you can print out the text you have written. The page layout box lets you tell the printer what kind of paper you are using, what kind of information should be at the top and bottom of each page, and how many lines should be printed per page.

Saving: Finally, when you have finished your work, it must be saved as a file. This gives it a name so that the computer and you can distinguish it from all of the other files. You can then turn off the computer. The next day, you can read the file back into the editor by *loading* it. You can continue working with it. Your documents must have unique names; if you give a document a name which is used already by a second file, that one will be erased and the new one will be saved with that name.



Using the Harlekin Editor

First, you must decide the maximum size of the editor's work space. This is done with the configuration program (see chapter 17). In the configuration program's **Settings** menu, click on the **Defaults** option. Write the number of kilobytes which the editor can use. If you want the editor to be reset-proof, then click on the little **R** symbol. Save your settings and reset the ST.

From the Harlekin icon, click on the "papers" icon in the Harlekin main menu (top left). Or, if you have created a macro, press the relevant key combinations (see the Macros chapter and the Configuration chapter on how to do this). The editor's window appears on the screen.

The Editor Window

At the top is the menu bar: **File**, **Block**, **Search**, and **Options** menus. Press the mouse button down and point at these: the menu pops down. The menu will not come down unless you press the mouse button!

To select an option from a menu, point at it with the tip of the arrow. It turns black. Release the mouse button and it will be selected.

To the right of the menus, **Line** reports the current line, **Col** reports the cursor's column number (number of spaces from the left), and **Memory** reports on remaining memory.

When you are in text mode (see the **Options** menu), Harlekin works with paragraphs. The lines in a single paragraph are a unit. If you delete words at the beginning of the paragraph, the rest of the paragraph moves up and reformats itself. If you are in ASCII mode, then the lines are separate from each other.

To detail the editor menu selections, we will start from the left menu and travel across.

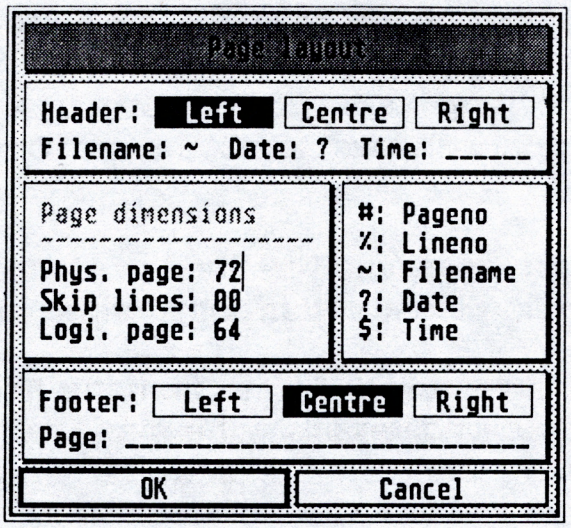
The File menu

By pointing at and releasing the mouse on the **New** option, you can create a new document. **Load** lets you load a document from disk and **Save** saves the document to disk. Note that next to some options there is a small up arrow and an **L** or an **S** (**^S**). This is the *keyboard shortcut* for the command on the left; e.g. if you press **Control + L**, you can load a document without using the mouse. Or, if you press **Control + S**, you can save a document (you must save a document so that you can continue working with it tomorrow).

Insert a second document into the current one by selecting **Read..** under the **Block** heading. First, place the cursor where the new document should be inserted and then select **Read...**

Another option on the **File** menu is **Print..** and we must digress slightly before coming to this choice.

To print, you must first describe your paper layout in the **Page Layout..** option within the **Options** menu.:



If you want a line of text at the top of your paper (a "header") or a line of text at the bottom (a "footer"), click within the **Header** and **Footer** choices where it should appear: towards the left, the right, or centred. On the next line, write the header or footer text. If the line is blank, nothing will appear, if it currently contains text you can delete it. Within the header and footer text, you can use various symbols which are noted in the mid-right window (these are called *meta-characters*). They expand and are replaced by text when you print.

(hash symbol) places the page number on the paper. If you put a hash in the header, then the page number will be at the top of the page. If you put the hash at the bottom, then the page number will be there. Of course, you can put hash symbols at both the top and bottom. If you want the printer to write **Page 34** or **-34-**, then write **Page #** or **-#-**.

% (percentage symbol) places the line number in the header or footer.

~ (tilde symbol) writes the document's file name.

? (question mark) writes the current date from the computer

$ (dollar) writes the current time from the computer.

You can choose to use these or not. The header/footer lines use two lines each (one for text and another one for space). If you don't use them, then you have four more lines per page.

In the picture above, the header icontains the document's name with today's date and time while the footer contains the text **Page:.**

You can change the page dimensions: to change the physical page (**Phys. page**), write the number of lines which the paper can hold from top to bottom. For fanfold printer paper, this is usually 72. For A4 typewriting paper, this is 70. At **Skip lines**, write the number of lines which you want the printer to skip down before it starts printing. 3 is a normal skip value. At **Logi. page** (logical page), write the number of lines which you want for the text. 60-62 lines per page is a comfortable number.

The page layout can be saved. Use the **Save Settings** option in the Systems Information icon (bottom right Harlekin module).

To actually print the file: select **Print** from the **File** menu. A small message box pops up and reports as the lines are sent to the printer. If the spooler is active, then the material will be sent to the spooler (see Chapter 14: Spooler). When the box disappears, you can continue working or you can quit the editor. Harlekin prints the current document; you don't need to save the text. The spooler can hold more than one document; open new files and click on print. You can send as many as you like; these are held in the spooler and printed out, one by one.

The next options (**Read**, **Write**, **Append**) are active only if you have created a block. So, let's go first to the **Block** menu.

The Block menu

A "block" lets you mark an area of the text which can be moved around, copied, printed out, or changed. Blocks are very useful for editing text.

For example, you want to move a paragraph from the top of a document to the bottom. Begin the block by placing the cursor at the beginning of the paragraph and click **Start** on the **Block** menu. Place the cursor where the block should end and select **End** on the **Block** menu. These actions can also be done by pressing **Control** + **B** (begin block) and **Control** + **E** (end block). The block area becomes grey. To hide the block marking, click **Unmark** (**Control** + **H**, or hide).

Copy a block by placing the cursor where the new copy should go and select **Copy** (or **Control** + **C**). Delete a block by selecting **Delete** or pressing **Control** + **D**. The block disappears. It can't be brought back. Moving a block from one place to another: mark a block, place the cursor where the block should go, press **Control** + **C** (copy block) and then **Control** + **D** (delete block).

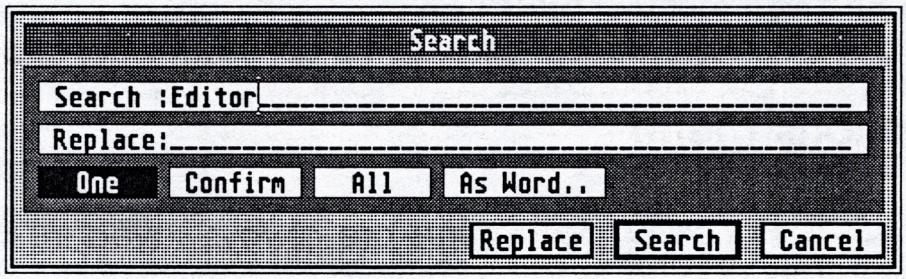
Print a block by selecting **Print** from the **Block** menu. Sort a block by selecting **Sort**. Sorting will rank the lines in the block by numerical and alphabetical order. If you have a list of friends, you can sort them alphabetically by marking a block and using **Sort**. Or, you can sort a list of telephone numbers or postal codes. It is not possible to undo a sorted list. See Chapter 17 for more on sorting.

Tips and tricks: Harlekin's speed lets you make spelling lists very quickly. Load a text file and change the line width to 2 characters per line. This makes a list out of the entire file. Place the cursor on the top line and press **Control + B**: this makes a block of the file. Now, use **Sort**. The entire list is instantly sorted alphabetically.

Note that blocks only work with whole lines you can't make a block of a single word in a line.

Back to the **File** menu: **Write..** lets you save a block as a separate file onto disk. Mark a block and select **Write...** A file selector window appears; give the block a new name (**NEW.BLK**, say) and press **Return**. It is saved onto disk. **Append** lets you add a block to a previously saved block. The new block is added to the previously saved block at the end.

The Search Menu



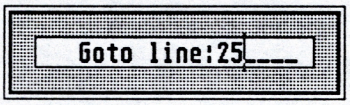
The **Search** option lets you search and replace. Write, in the **Search:** line, a letter, word, or partial word that you want to be found. It is easier and you have a greater chance if you use parts of a word. Instead of writing **unaccessible** which you may have spelt incorrectly anyway, write **unac**; this finds all instances which have those fragments. If you click **As Word..**, then it only finds those words which are whole words. If you select **Confirm** a message notes each find.

Jokers (represented as **?**) can stand for any single character. If you search for **c?t** then it will find **cat, cot, cut** You can also use **c???t** to search for three unknown characters.

A *wildcard* (written as *****) can stand for any number of characters. If you search for **c*t** then it will find **cat, coot, collect, candy coloured bat!**

If you only want to find words which are at the beginning or the end of a line, then place a **|** before or after the word. (**|** = ASCII value 124 and is shifted, next to the **Z** key on a UK keyboard)

Replace is very fast and therefore very useful. With the ASCII macro, you can search and replace any character, including word processing characters. In Wordplus, for example, you can search and replace the "wrong" fix spaces (ASCII decimal value 32) with "correct" expanded spaces (ASCII decimal value 30); you can also replace double spaces with a single space. (For an explanation of ASCII values, see Chapter 5: ASCII Table; for an explanation of the Macro processor, see Chapter 8.)

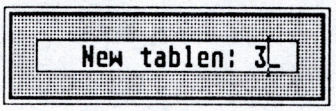


Also on the **Search** menu, **Go to Line** lets you go to a line in the text. Select this with the mouse or press **Control + G** and enter the line to which you wish to go in the box which appears.

To move to the top or bottom of the text quickly, select **Top** or **Bottom** from the **Search** menu or press **Control + T** (top) or **Control + N** (bottom). You can also double-click on the up/down slider arrows.

The Options menu

TEXT vs. ASCII. Harlekin's documents are always saved in ASCII; this means that they can be read by all word processors and computers. But Harlekin has two ways of dealing with the ends of lines on the display: either they are single lines and stand separately from each other, or they are connected together into paragraphs. You can switch between these by clicking **ASCII mode** or **Text mode**. If you work in ASCII mode, then the lines are separate. You don't have automatic reformat nor paragraph functions. If your text is in text mode, then you can reformat the text.



Tabs: every time you press the `Tab` key, the cursor hops a number of spaces to the right. `Tab length:` lets you set the number of tab spaces. This is usually set to 3, 5, or 8 spaces. Different word processors use different kinds of tabs: e.g., for a tab width of 5, either they create five blank spaces, or they place a *single* character which is "five spaces wide." Harlekin tabs are the "multiple blank spaces" kind. If you read in a document which was created on a wordprocessor with tab characters, then those won't be automatically expanded. Instead, you'll see a little clock symbol (ASCII decimal value 9). Select the `Expand TAB` option before you load the text and any such tabs will then be correctly expanded to spaces. The opposite command is `Compress SPACE`. If this is active, then your tab spaces will be compressed down and replaced by a single tab character. This saves bytes and your documents fill less space on disk. This is especially useful with program codes which use lots of tab spaces. Normally, you should leave both `Expand TAB` and `Compress SPACE` on.

`Line Width`: this lets you choose the width of your text in number of characters. 65 characters per line is the office standard. You can of course use wider texts. If you change the line width, and the editor is in text mode, then it will ask you if it should reformat the document. Text re-formatting is very fast: 40 pages of text are reformatted in about five seconds.

`Page layout..` was described above under **The File menu**.

Notes: If you use Wordplus along with Harlekin, you should save your Wordplus files with WP MODE OFF; this saves the file without the special Wordplus word processing characters. Otherwise, when you read such a Wordplus file into the Harlekin editor, strange characters appear on screen between the words. Or, you could read the text in and use REPLACE to change the stretch space (ASCII 30 character) into a fixed space (ASCII 32.) To do this, open REPLACE (press Control + F). In the top line, press ALTERNATE and write 30 from the numeric keyboard. A little symbol appears. In the second line, press Alternate and write 32 from the numeric keyboard. A blank space appears. Select "ALL" and "REPLACE." The reverse is possible with Wordplus: A Harlekin file isn't correctly reformatted in Wordplus because of the wrong spaces. In Wordplus, open the REPLACE option. In the top line, press the space bar once. In the second line, press the space bar once. This replaces the wrong fixed spaces with correct, stretch spaces.

Calamus and Harlekin: Harlekin is extremely useful with Calamus: without leaving Calamus, the Harlekin editor can open a Wordplus formatted file and work with it. As explained above, simply convert the fix spaces into stretch spaces to end up with a true Wordplus format.

General

Margins and Harlekin: Harlekin can't create justified right margins. Harlekin prints the left margin close to the edge of the paper. In order to make a wider left margin, use the Printer Filter (see **Chapter 3: Printer Filter**).

Bookmarks: To find a position again, you can leave *bookmarks* in the document. Later, pressing a key will bring the cursor back to that bookmark. To set a bookmark, place the cursor and press `Control` + `1`, `2`, `3`, or `4` (the numbers above the keyboard). To return to a bookmark, press `Alternate` + `1`, `2`, `3`, or `4`. The bookmarks are reset-proof but are not saved with the document.

Keyboard: Cursor arrows move the cursor up, down, to the right or left. `Shift` + right or left cursor arrows moves the cursor to the margins; `Shift` + up or down cursor arrows moves an entire screen up or down. `Delete` erases the current cursor space; `Backspace` deletes the preceding space. `Control` + `Delete` will erase an entire line.

Summary of keyboard commands

File operations

Control + S	Saves a file.
Control + L	Loads a file.
Control + I	Inserts a file.
Control + W	Writes a block as a separate file.
Control + P	Prints the current file or block (if any).
Alternate + W	Adds a block to a previously written document.

Block operations

Control + B	Begins a block.
Control + E	Ends a block.
Control + H	Hides a block.
Control + C	Copies a block.
Control + D	Deletes a block.
Control + P	Prints a block (or the whole document, if there is no block).

Search operations

Control + F	Find
Alternate + F	Repeat find

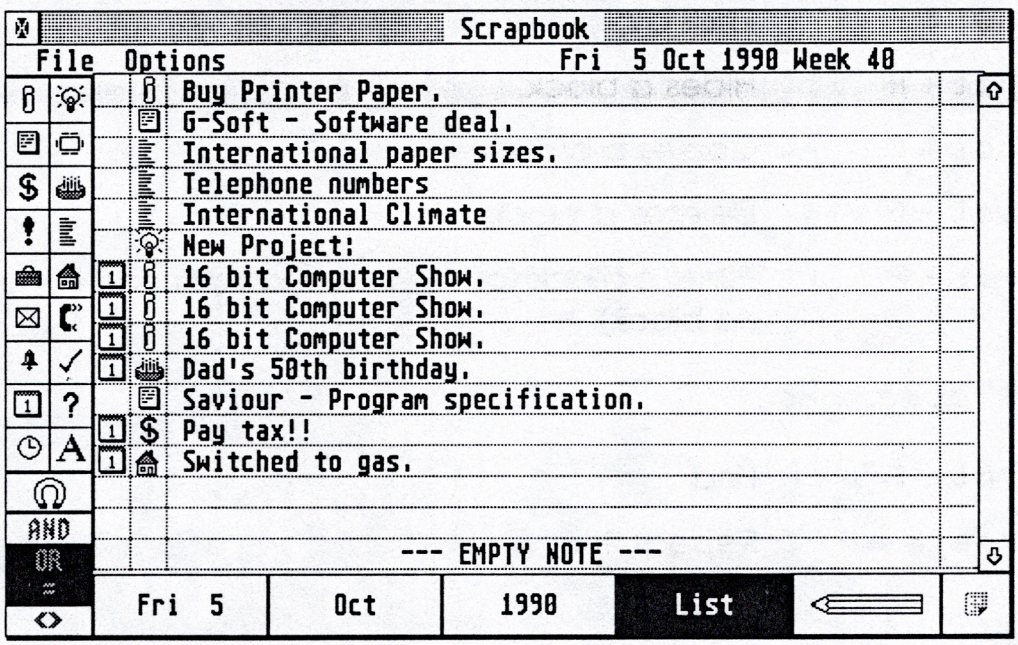
Other

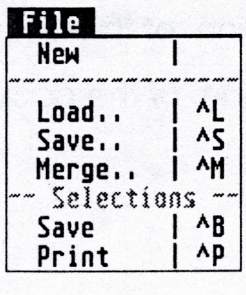
Control + T	Top; goes to the top line. of the document
Control + N	End; goes to the last line. of the document

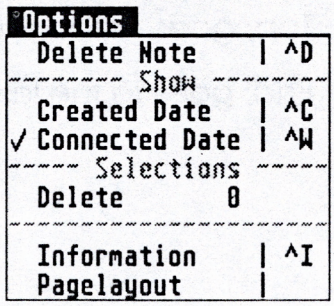
Scrapbook

Summary

- The scrapbook is the centre of Harlekin.
- You create cards or notes of unlimited size.
- The scrapbook has its own full-function editor.
- You can mark the notes with your own icons.
- Notes can be tied to a date and listed in a calendar.
- You can select particular notes by category.
- The scrapbook is an information management system which uses windows, icons and the mouse.







Using the Harlekin Scrapbook

It's up to you. It is certain that no two people will use it in the same way. The Harlekin Scrapbook, more than any other Harlekin module, is made for you to develop in your own style.

You can store time schedules, dates, deadlines, birthdays, milestones, or events in the Scrapbook. You can collect all sorts of names, telephone numbers, addresses, notes, reminders, book titles, cooking recipes, telephone numbers, patients' names, etc. You can write notes, letters, essays, even 100 page reports in the Scrapbook. You can plan and keep track of administrative projects, such as writing programs or your papers. You can then create icons for each of these kinds of things ... and, by clicking on the icons, you can let the Scrapbook show you only that kind of item, or a combination of items. You should not think of the Scrapbook as "just a Scrapbook." It is up to you how it will be used.

We consider the Scrapbook to be the most interesting part of Harlekin. We want to hear your comments on the Scrapbook based on your experiences. We will consider all suggestions and comments and make a better Scrapbook. If the response is large enough, we will edit and send out to registered users a newsletter with your application of the Scrapbook for the benefit of other users.

An Example: in order to learn how to use the Scrapbook, we created one for you on disk (`HARLEKIN.SCP`). It loads automatically onto your system. When you no longer need this tutorial Scrapbook, delete it from your work disk.

Configuring the Scrapbook

Your original Harlekin disk is configured for a 520ST system. If your system is larger, or you want to use a larger Scrapbook, then you can re-configure the Scrapbook. Start the configuration program and change the Scrapbook's size.

Notes

The Central Concept: the *note* is the basic unit in the Scrapbook. It is made up of text, one of 12 icon markers, and two separate time stamps.

The text has no limits in length or contents. The Scrapbook uses the Harlekin wordprocessor to create text: you can write a few words, several lines, sentences, pages, or an entire book. The only limits are your ST's memory and disk space.

The *icon markers* help you to mark a text. In the configuration program, you can create your own icons. When you write a new note, you can choose an icon for it: telephone messages can be marked with a telephone icon; dates can be marked with a calendar; appointments can be marked with a clock; names with a little person icon, etc. The kinds of notes which you collect in your Scrapbook will be your own style; you can create icons for each. Press and hold down the mouse button over an icon and its description will appear at the top of the screen.

The *time stamps* consist of a date and a time: when you create a note, it is automatically stamped. You can also change the time and date of the note.

Sorting the Notes

As mentioned above, you can mark the notes with your various icons. Using the icons and a combination of search rules, you can choose which notes will be shown or hidden. These various points are the general rules about the notes. To repeat, you can create notes about anything. To identify the note, you can mark it with one or more icons. The note can also be marked with a date. The notes can be shown in various ways by using the icons and the various logical rules. You can print out notes.

Let's now look at the scrapbook and how to use it.

The File Menu

This is very straightforward: **New**: to start a new Scrapbook. **Load**: to load a previously-saved Scrapbook. You can have more than one Scrapbook. **Save**: to save the Scrapbook with the changes you have made in this session. Scrapbook files should have the extension **.SCP**. **Merge**: to merge (combine) two scrapbooks.

Under the **Selections** heading: **Save** : this saves only the currently displayed notes. Use the icon selection to distinguish between different classes of notes. **Print**: to print the currently selected notes.

From the **File** Menu, the **Print** option will print the notes which can be seen. We must emphasise: *the notes which can be seen.*

The displayed notes are a combination of time and icons. For example, you click on the travel icon; if you are looking at the 10th of August, then only that day's travel notes are printed. The printed daily notes are sorted by time. If you are looking at the month of August, then all of the travel notes for that month are printed. If you are looking at the year, then the entire year's travel notes will be printed. The printed monthly and yearly notes are sorted by day. With each entry, the day, month, year, and week number is printed.

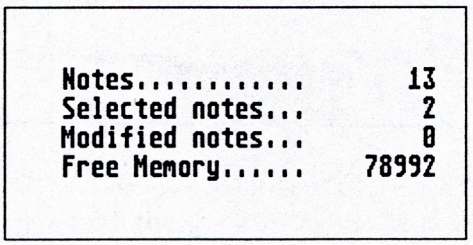
Before you print the notes, you must decide the page layout. From the **Options** menu, select **Page Layout**. It is the same one that is in the editor (see **Chapter 1: Editor**). The settings must be set separately here.

The Options Menu

Delete Note: click on a note and then use the **Delete Note** selection to erase it.

Created Date and **Connected Date**; notes can be shown by either *created date* (the day upon which it was written) or *connected date* (the day to which it has been assigned.) This can be chosen from the **Options** menu. For example, on the 10th of August, you had many planning projects. You wrote 12 different notes, and assigned each to a different day in August. By clicking on **Created Date**, the tenth of August will show all twelve notes which you wrote that day. By clicking **Connected Date**, you can see in the month display the notes in the various days to which they were placed.

Delete OOO under the **Selections** heading: to delete a set of notes. When you have used the icons to select a set of notes, then you can erase all of the members of this class. More on this later.

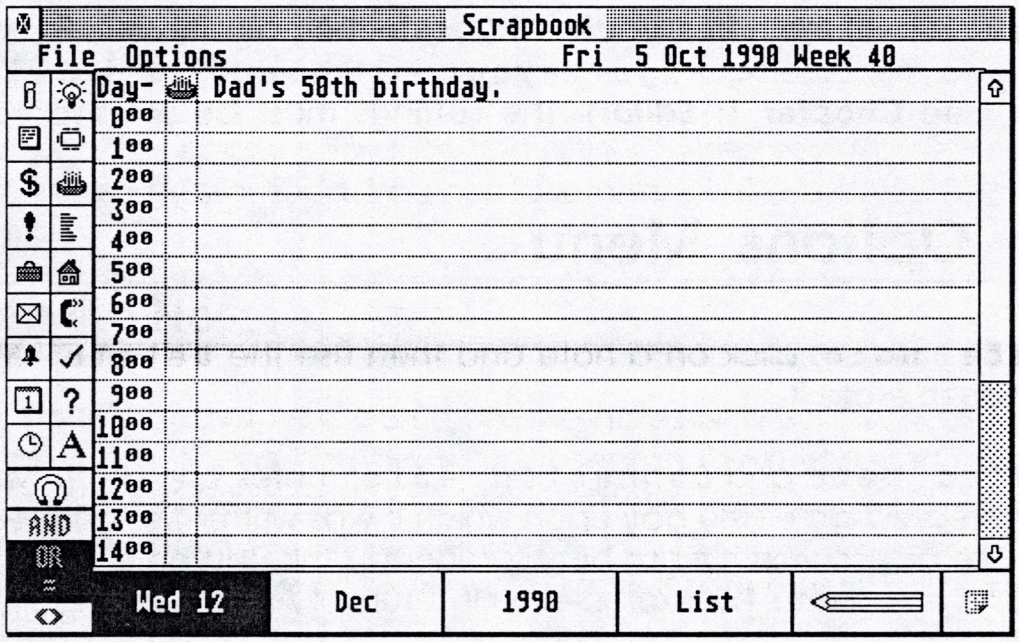


Information; reports on your work in this session: the number of notes in the current scrapbook, the number of notes which have been changed in this session, and the amount of memory remaining.

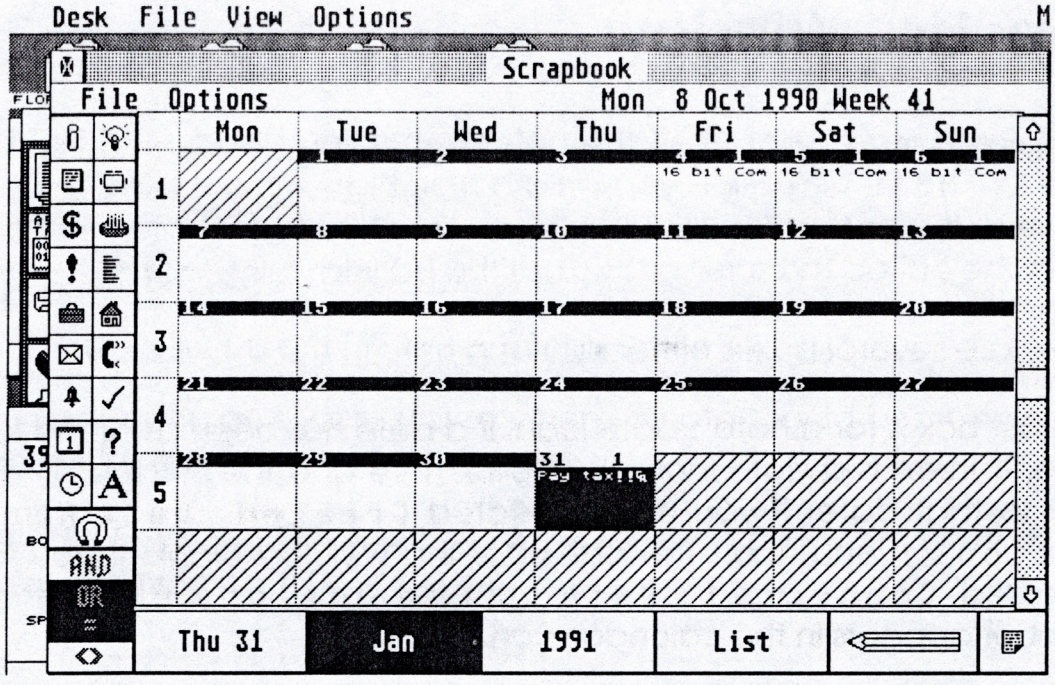
The Scrapbook Window

At the bottom of the scrapbook window, there are various buttons. These let you select the kinds of calendars: days, months, or the year. You can also choose to see the notes as a list. And you can reach the text editor as well.

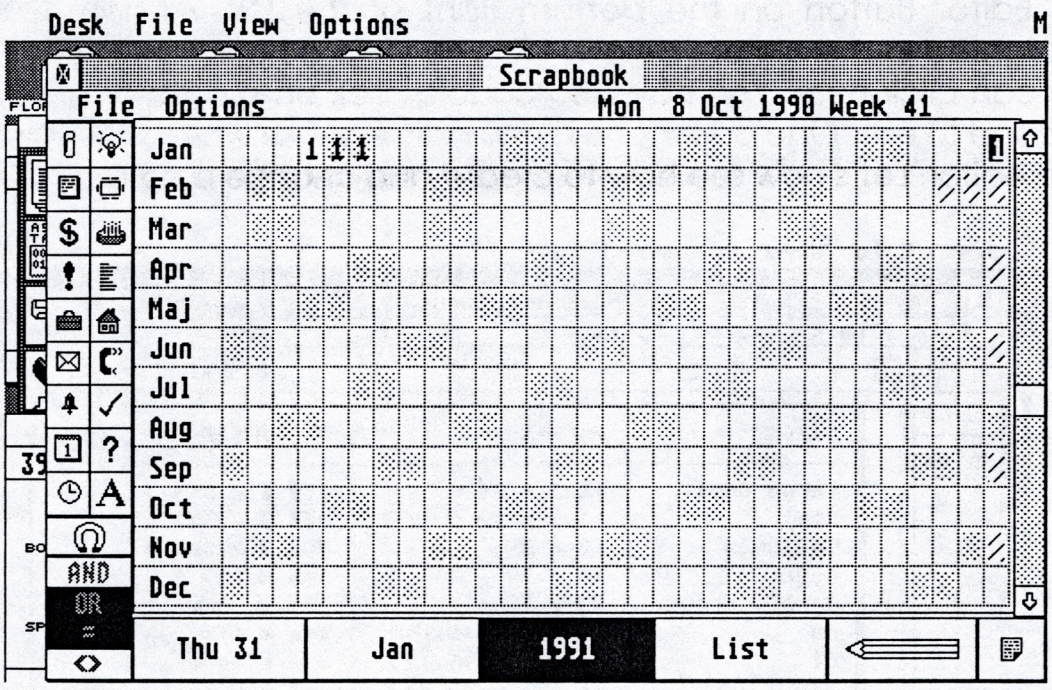
Click on the day box to see the scrapbook by days. If you made a general note for the day, then it is at the top. If you assigned a note to a hour, then it is listed there. By scrolling, you can move up or down.



Click on the month box to see the scrapbook by months. The first eight characters of the three first notes are shown. To move to the last or next month, click on the up/down slider arrows. If you click in the grey bar, then the calendar moves ahead an entire year. The white slider box can be dragged to a new position. In contrast to the general Harlekin rules, a double click on the arrows does not have a special effect. (For an explanation of the slider box and scrolling, see the **Introduction**).



Click on the year box. The number of notes for each day are shown. If there are more than nine notes for a single day, then the infinity symbol appears. Grey boxes are weekends. Non-existent days are crossed out (such as February 31st). The same scrolling rules apply as for the month box.



Harlekin's Calendar Span: The calendar ranges from January, 1980, to December, 1999. The current time and date is read from the ST's time and date. To set these, use the control panel (see **Chapter 15: Control Panel)**. If a note has not been assigned to a date, then it will not appear in the day/month/year calendars. It will only appear in the `List` window.

The List Window

This gives you a list of all of the notes in the scrapbook. The last line is **EMPTY NOTE** which lets you write a new note without having to scroll down to the bottom of all of the notes. Double-click on it to open it and enter the editor. The scroll arrows use the Harlekin rules.

There are several boxes either side of a note in the List window.

The first box is for a note's date icon, if a date has been assigned to the note. If there is a date icon, then click here and the Scrapbook takes you to that date. If you have selected **Created Date** from the **Options** menu, then the calendar icon will be blank; if you have selected **Connected Date** from the **Options** menu, then a number appears in the calendar icon.

The second box shows you the icon which has been assigned to the note, in addition to its calendar icon. The third box, on the right side, lets you tick the notes: a check mark appears. Point in the box and click once. Click once again to "untick" a note. You can also select which notes will be listed by selecting icons.

The Editor Button on the bottom right of the List window (shown highlighted in the picture below) lets you write a note. To write a note, you can click here. You can also double-click on a note or an empty note line to enter the editor. The menu bar changes when you enter the note editor. Let's now see how to create and change a note.

More about Notes

The following gives you more information about *notes*, the essential concept of the Harlekin scrapbook.

Writing a Note

There are many ways to write a note: You can double-click anywhere in the calendar on an empty space where a note should be; this can be in many places in the different displays.

- *DAY display*: double-click either at the top for a daily note or on a time line, for example at 14:00.

- *MONTH display*: double-click on a day.

- *YEAR display*: double-click on a day. When you create a note in either hours or days, the time or date is automatically carried over to the new note.

- *EMPTY NOTE* (see the **List Window**): double-click here to create a new note.

- Double-click on a note itself: you can then add to it.

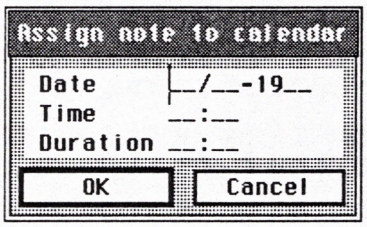
- Finally, you can click on the Editor icon to the bottom right of the List Window.

All these actions open the note editor and you can begin to write. Choose the first line and especially the first eight characters carefully. These are the ones which will appear in the day and month calendar. Instead of writing `This is the best...`, write `Car: Hamburg`. You should use the first line as a "newspaper headline."

When you have finished, give the note an identifying icon. Click on an icon on the left-hand side of the window. A note can have more than one icon; in fact, you can use all of them. If you can't decide a note's principle identity, then you can give it several icons. Birthday dinners for friends and business associates can be distinguished in this way: both can be marked with birthday icons; furthermore, one note can have a friend icon and the other a business icon. An "urgent" icon can be used to mark all kinds of notes. A note about a planning meeting at work could be marked with the following icons: Projects, Ideas, Meetings, Work, Urgent.

The top Menu Bar gives you access to the Editor options. Yes, they are the same as in the Editor in the main Harlekin icon. See **Chapter 1**. As you can well guess, you don't have to use the main editor; you can write all of your material in the Scrapbook editor; this gives you access to the icons, database search, and calendar planning.

The lower Menu Bar lets you assign the time or date. Click on any of these three time/date icons (a calendar, clock and hour glass). Enter the date and time of this note. **Duration** lets you record how long an activity has lasted. You can always change a note's time/date/duration; double-click on the note and then change the time/date bars. You do not have to assign a date and time to a note but you will want to do so for birthdays, appointments etc.



When you have finished writing your note, click **END EDIT** (top right). Either click once; this saves the note and exits to the daily calendar to the previous window (day, month, year, or list), or double-click; this saves the note and clears the editor so that you can write the next note. Empty notes are ignored.

Copying Notes

You can make several copies of a note.

For example, a weekly meeting can be placed on every Monday. To copy a note, write it but don't use the **END EDIT** button. Instead, click on the Month or Year button at the bottom of the Editor window.

The month shows up. In the lower right corner, a small notepad icon becomes black. Point the mouse here, press, and do not release the mouse. The mouse cursor turns into a notepad. Without releasing, move the mouse to the first Monday in the month. Release the mouse. The note will be placed here. However, note that it only appears the next time you click the sorting icon, thus refreshing the screen.

Go back to the notepad icon, press, and drag the mouse to the next Monday. If you had already created a note in February about buying a 100kg sack of dog food and Snoopy is hungry again, simply double-click on the note **Buy dog food!** and then go to the year display and copy the note onto the first day of every month.

Sorting Notes

In any window (except the **Editor** window), you can decide which notes will be shown. This lets you sort the notes according to their icons or by text.

On the left, at the bottom of the icon display, there are the icon sorting buttons. These let you sort the notes according to a combination of icons and sorting rules.

The first button (a magnet) is a general selection button: if the magnet icon is *not* selected (white background), then *all* notes with *all* icons are shown. If it *is* selected then you can use **AND** and **OR** rules to select particular sets of notes.

Below the magnet are the **AND** and **OR** buttons. These two buttons can have a further two conditions shown below them: = which means *equals* (surprise!) and **<>**, which means *excludes*. To change these, click on them. You can switch back and forth between the magnet, **AND**, **OR**, and the condition buttons. You cannot select **AND**, **OR** etc. if the magnet icon is not selected - this would not make sense.

Use these icons in combination to choose a selection of notes. The rules are fairly obvious and are best explained by examples.

You have ten different kinds of notes, which fill up the screen. Some of the domestic notes (a house icon) are urgent (an exclamation mark icon); some of the business notes (a business card icon) are urgent, some of the holiday notes (a sun icon) are urgent. There are also ordinary, non-urgent, domestic, business, and holiday notes. If you de-select the magnet, all notes with all icons appear. To display particular groups of icons, proceed as follows:

Click on the Magnet, the **AND** button and the =: these become selected (black background).

To see all of the urgent business messages, click on the business card and exclamation mark icons. The **AND** = means: "show all notes which have icons *equal* to the business card icon *and* the exclamation mark icon".

To see all of the remaining notes, but not the urgent business notes, click on the "<>"; this changes the sorting rule to "show all notes excluding all those whose icons are *not equal* to the business card icon *and* the exclamation mark icon".

To see all of the urgent notes out of 100 notes with mixed multiple icons (e.g. urgent / business / dinners, or urgent / holiday / planning), click on the "urgent" icon (exclamation mark), the **OR** button, and the **=.** This shows any note which has an urgent icon.

To see all of the remaining notes which are not urgent in any way, change the buttons to **OR <>**. This shows all notes which have no urgent icon.

Try it our for yourself - you should soon get the hang of this very useful feature.

Icons

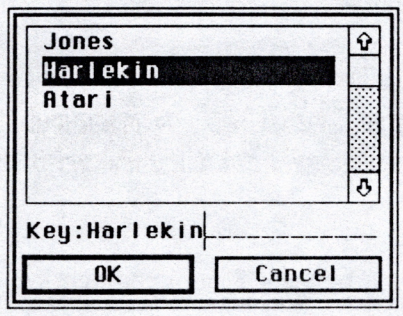
You can design and define the top twelve icons. Using the configuration program, you can change these, re-name them, or re-draw them. The lower six icons are fixed and are described below.

The Bell and Clock icon do not have any function in the current version of Harlekin. They could allow a note to remind you at a future date but adding these options would make the program function much more slowly. They may be supported in a future version.

The Check Mark (tick) icon is connected with the notes which have been ticked in the List window (see above).

The Calendar icon can be used to find which notes have been placed in the calendar i.e. which have a date assigned to them. When looking at the list and using an "exclusion" sorting, you can see the notes which haven't had a date connected with them.

The Question Mark icon is used this to find which notes have been changed, but not yet saved onto disk. You can quickly check if any notes have been changed; if not, then you can safely turn off the ST.



The **A** icon allows text search. Click here and you can search through the Scrapbook for a word. To use this, click on the **A** icon. In the lower line, you can write any key word(s) which the notes contain e.g. if you are looking for birthdays, write **Birthday**. You can also use wildcards (**?**) and jokers (*****) (see the entry for Search/Replace in the Editor, **Chapter 1** for information on wildcards and jokers).

The search is *case-specific*; it looks for words which exactly match the key word. If you search for **Bob**, it won't find **bob**. You should use wildcards and jokers as much as possible.

Harlekin can save a collection of key words. Enter a word, click **OK**, and then re-open the text search window by double-clicking on the **A** icon. The key word appears in a black bar. If you now click with the mouse on an empty line underneath the black bar, your new key word will be entered there. In this way, you can make up a collection of key words. Just double-click on the word to search for it. The text icon can be used in combination with the other icons; e.g. you can search for work icons which contain the word **Robert**.

All of the icons, including the text icon, can be used in combination. With the four sorting conditions, you can quickly change the display to find a class of notes.

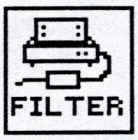
Deleting Notes

To delete a single note, click once on the note; it turns grey to show that it is active. Now, select **Delete Note** from the **Options** menu. You can also press **Control + D** (delete).

To delete a category of notes, set up a display which includes the category or excludes the category and select **Delete** under **Selections** in the **Options** menu. A number shows you the number of notes that will be deleted. A final message box ask you to confirm this. For example, you wrote seven messages this morning about your job and you just got fired. Click on the question mark icon; this shows all messages which haven't yet been saved. Click on **Delete**; they disappear.

About Notes

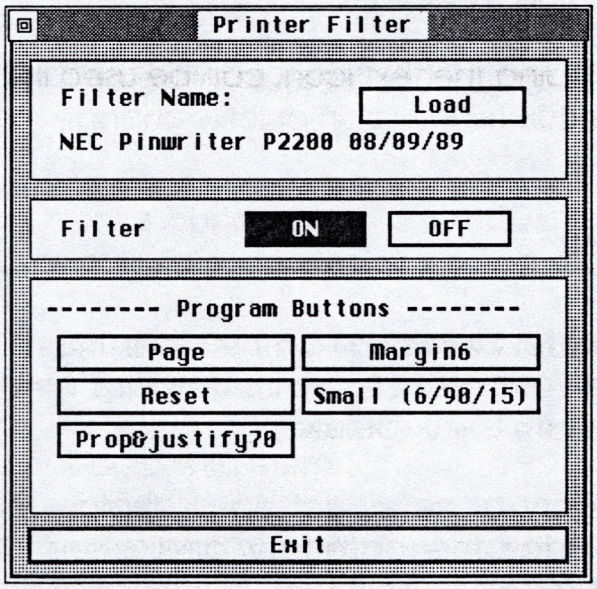
The only limits to the size of a note or the number of notes is your ST's memory and your disk's storage space. You can always make several scrapbooks. From the configuration program you can reset-proof the Scrapbook.



Printer Filter

Summary

- The printer filter captures and, optionally, converts all ASCII characters coming from the ST to the printer.
- You can install your own printer filter for your system so that you can take full advantage of your printer's capabilities.
- Characters can be automatically printed in graphic mode so that you can print characters which your printer normally can't print.
- Single characters can be converted into a string of characters and commands.
- Buttons for your printer definition can be created.



A very short guide

In the configuration program, you select and install your printer driver. This is saved in the Harlekin Definition file.

From the Harlekin menu, click on the printer filter icon. The Printer Filter window appears and you can choose to load other printer filter setups. You can also turn the printer filter off or on. The buttons let you send various commands to your printer. To use a button, click on it. It will blink once. If you are not certain, click **Reset** and try again.

General

The method in which characters are described and used by computer and printer manufacturers is not standard. This is a problem especially for smaller countries with special characters in the alphabet. The code for ñ can be different from country to country (see the ASCII chapter for more about this).

Your printer is also a computer. It has its own collection of characters. When you print a character, such as "ä", the ST only sends its ASCII decimal value (which is usually 132) to the printer. The printer then receives the command "print character number 132" and looks in its collection of characters and prints whatever is numbered 132. If that happens to be an "ä", then good. But... if there should be a different character with the same number, then you'll get that instead. Or, most likely, your printer, made by a Japanese company, doesn't have any Danish characters. So you get a blank instead.

This is the reason for printer drivers. A printer driver is basically a conversion guide. If the computer wants an "ë", then it tells the printer "let's print ë, which has the character value 145". The printer may have an ë, but with the character value 157. Therefore, the printer driver tells the printer "if you get an 145, you should print 157."

Every time you print with a new program, you need to make a new printer driver so that special characters can be converted.

Harlekin takes care of all of this. The Harlekin printer filter is a total solution to all printing situations. Since it is always in the computer, it always takes care of any character conversion between the computer and the printer. You don't have to make new drivers for new programs.

If you don't understand the following, contact a professional programmer, a user group, or your local dealer. Creating a proper printer driver is a complex job.

Making a Printer Driver

Use the Harlekin editor to open and change the HEX file for your printer. For a 9 pin printer, use the **NORM_9N.HEX** as a template; for a 24 pin printer, use the **NORM_24N.HEX** file.

Refer to the program's manual and your printer's manual for tables of the various character ASCII values. Enter your program's character ASCII value and then the printer's corresponding ASCII value. If the character is not in the printer's standard set, then you must give a command to the printer to switch to a new set, print the character, and then switch back to the standard set. If the character is not at all in the printer's sets, then you can use a series of commands and information to cause the printer to print the character as a small graphic character.

There is another problem: sometimes, you don't want the printer to convert characters but to leave them alone. This happens especially when printing graphics. In such cases, the conversion sequences must be suppressed. By adding to the printer driver the relevant printer command codes, the printer driver can then choose in which situations the characters should be translated and when they should be left alone.

The lines within the sample printer drivers are commented, so you should be able to change them as needed. Under **TRANSLATION** and **PRINTER COMMANDS**, you may need to make changes.

TRANSLATION: Place here all of the characters which must be converted. Each line should hold only one character. A line is made up of hexadecimal numbers which are separated by commas and blank spaces. The first number is the ASCII value of the character in the ST's character set. The following numbers control its conversion. A character can be translated into a single character or a series of characters and commands, which may be up to 250 bytes long. The target characters must be in the same line as the source character.

The Harlekin printer driver (**.HEX**) files are very similar to the 1st Word / Wordplus **HEX** files. In fact, if you have a 1st Word driver which works fine for your printer, then you can use parts of the **HEX** file to create the Harlekin printer driver.

PRINTER COMMANDS: A further feature of Harlekin lets you create short-cut buttons for controlling your printer. Up to eight printer command buttons can be made; then, by clicking on the button in the printer filter box, the command or string of commands is sent to your printer.

The buttons are up to you. You can make buttons which make the printer use 1.5 line spacing, wider margins, print in bold, use other character sets, reset the printer, etc.

First, at the appropriate point in the HEX file, enter the command name; this is the text which will appear in the Harlekin button. Then enter the commands in hexadecimal. See your printer manual for details of the commands available.

A detailed description of the format of the HEX files can be found in the text file HEXINFO.TXT on the Harlekin disk.

Communications

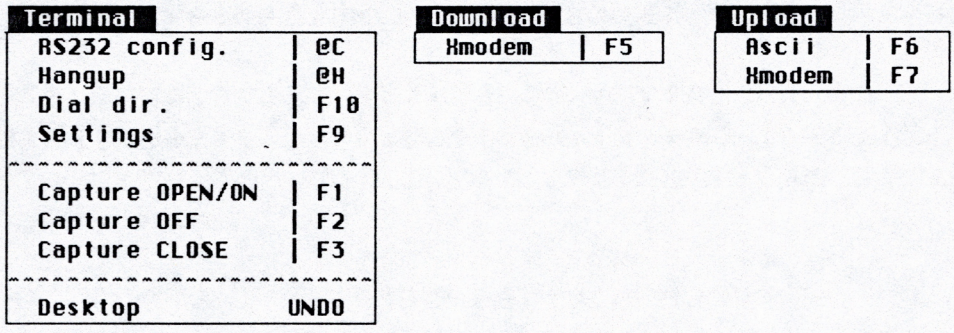
Summary

- A terminal program (also called a VT52 emulator.) This lets the ST communicate with the outside world.
- You can connect the ST directly to another computer with a cable and then use a terminal program.
- With a modem, your ST can use the telephone lines to "talk" to other computers.
- Your ST can talk with any computer: other STs, PCs, Amigas, or mainframe IBMs.

The terminal program only works if your system is actually connected to another system, either with a cable or a modem.

Introduction

The Harlekin terminal program doesn't use a window. The top line is a status report; it tells you what the terminal program is doing. The menus can be reached by holding down the mouse button and pointing to the menus.



The Terminal Menu

This is the main menu which has the following items...

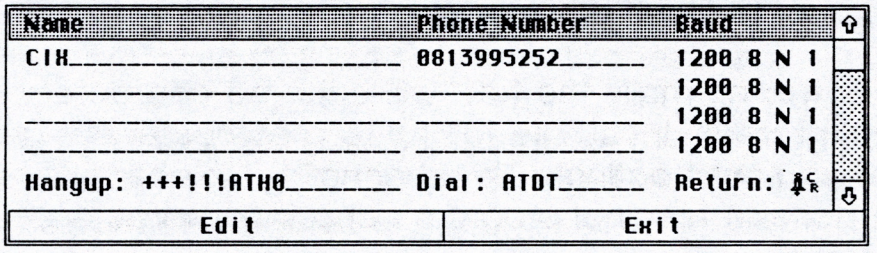
RS232 Config

This defines the settings for the RS232C serial port. When two computers are connected, both must use the same settings. Most problems are due to incorrect settings. This option can also be reached by pressing **Alternate + C**.

Hangup

This ends the connection. Your Harlekin uses the standard Hayes hang up code; if you have a different or a special system then you can change this in the dialling directory (press the **F10** key). You can hang up the line by pressing **Alternate + H** (Hangup).

Dial dir

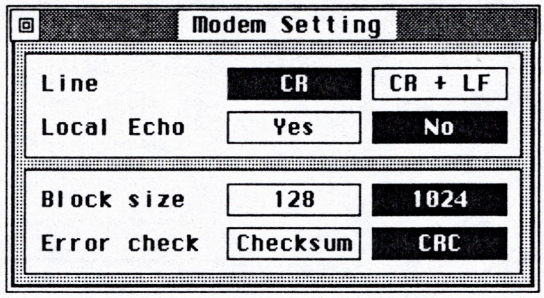


You can dial the phone by writing ATDT (the dial command) followed by the telephone number. Or, you can enter the number in the telephone list, along with any settings. Afterwards, click on the number to dial. You can save the number for next time. Initially it is in "dial" mode - when you click on an entry the phone will be dialled using that number.

To enter new numbers or make changes click on **Edit**. The text cursor will appear in the first entry line. move the cursor to a blank line to enter a new number. The first field should be for the name, the next for the telephone number. At the bottom, you can change the dial and hang up codes. To the right, you can change the settings. Most systems now use 8N1 (eight bits, no parity, one stop bit); older systems often use 7E1 (seven bits, even parity, one stop bit). You can change numbers or names by clicking on that line.

Click **END Edit** to exit from "edit mode". To save these changes, press **UNDO**. This brings you to the desktop; open the Harlekin Systems Information icon (the exclamation mark) and click **Save Settings**. The dialling directory has room for 20 numbers.

Settings



Brings up a box where you can define how the terminal program must respond to your keystrokes. The xmodem settings can also be altered.

CR should be selected if the host to which you are connected, will interpret <Carriage Return> as newline.

CR+LF should be used if the host expects explicit use of <Line feed> to force the cursor to move downwards.

Local Echo: normally the host will echo he characters you type back to your screen. If you are talking to a computer not generating "far_echo" you must activate "local echo" by selecting **Yes**. This will make the Harlekin terminal program echo the characters directly to your own screen.

The lower box (with **Block size** and **Error check** selections) is for setting the Xmodem protocol: the standard Xmodem protocol works with 128 byte block sizes and uses a simple checksum for error detection. If available you should however choose 1024 byte block sizes for speed and CRC (cyclic redundancy check) for minimising the risk of un-detected transmission errors.

Capture OPEN/ON

When you use a terminal program, the text scrolls past the window. You can't bring it back; it is lost. By using **Capture**, the text is written onto your disk. Afterwards, you can edit it, put it in other documents, or print it out.

The file capture writes to the disk as the text scrolls over the screen. Therefore, you must not take out the disk until you have closed the capture. "Closing" means that the file's name and information is written to the disk.

You can turn on the file capture either before you call or in the middle of a call. You can turn the capture off for a moment and back on again. To finish, you close the capture. The Function keys (F1, F2, F3) can be used as well.

Desktop

Closes the terminal window and goes to the desktop. This does not close the telephone line! The ST is still connected. It is sometimes useful to exit without disconnecting; you can go to the desktop, start up a different terminal program, compress a file with **ARC**, and return again. To hang up the line, you *must* use the hang up command (**Alternate+H**).

The Upload and Download Menus

These let you send and receive files. Harlekin uses the standard ASCII and Xmodem protocols (128 byte blocks with checksum).

To send a text file, use the ASCII upload mode. The file must have been saved in ASCII. Click on **Ascii** on the **Upload** menu (or press **F6**) and select the file from the file selector.

If you are sending a *program*, use the **XMODEM** upload mode. It is best to compress the file with **ARC**; this saves telephone time. Click on **XMODEM** on the **Upload** menu(**F7**). Select the file from the file selector.

To receive a file as a text, use the file capture (see above).

To receive a *program*;,use **XMODEM** receive mode. Click on **XMODEM** on the **Download** menu (or **F5**). Create a new name (anything is acceptable, such as **1.ARC**).

Sending and receiving can be stopped with **UNDO**.

It is beyond this manual to describe everything that you can do with the Harlekin terminal program. You can write a file in the editor; make changes in a program with the monitor, and, without leaving Harlekin, send them directly by modem to another system.

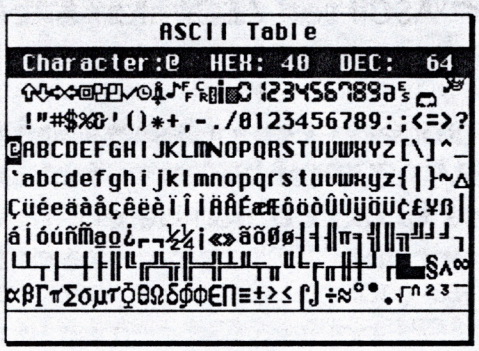
The production of Harlekin and the manual in English and German was done simultaneously in different cities in England, Denmark and Germany. Notes on bugs, problems, suggestions, and ideas were sent back and forth. The Harlekin program itself was sent back and forth several times for corrections, changes, and translation. As a chapter was finished, it was instantly sent to the translators and previous chapters were returned for proof-reading. All of this was done with Harlekin and would otherwise have taken weeks by mail.

For more information on modems, BBS systems, ARC, UUE, and using the ST in communications, see *Your Second Manual to the Atari ST*. If you have problems in setting up your communications system, contact a BBS; describe the problem and someone can usually help you. You can call the BBS in Aarhus, Denmark: Tel. +45 86 20 20 16 (8N1) to contact the Harlekin programmers.

ASCII table

Summary

- Displays the ST's entire ASCII set in "normal" characters, decimal, and hexadecimal numbers.
- You can insert any character from the ASCII table into any text, even if the character is not on your keyboard.



Theory

What is an ASCII table? An "A" is not just an "A." The ways in which we count it and represent it are different. A language, such as German, is made up of 30 characters (the normal a,b,c, plus ä,ö,ü and ß). This is the *character set*. Those characters can be written down in many different ways. A *font* is the collection of images which we use to write out a character set: the German character "a" is written with "A" and "a".

Computers need a method of dealing with character sets and fonts. This is done in two ways. The computer's character set is the numbering system which is used for each of the letters of the alphabet. The characters in the character set are numbered: maybe A = 1, B = 2, C = 3, etc. The computer's font, however, is the shape of those letters as they appear on screen. A matrix of dots is then assigned to each number. The dots draw the individual letters in the font's design.

These character sets are somewhat, and only somewhat, standardised. In the beginning of computers (over 10.5 million minutes ago...), every European country had its own numbering system for their local language characters. The German "ä" had a different number than the Swedish "ä." No one could agree without losing national dignity or starting a world war. So the American system, especially IBM's, became the standard because IBM is larger than most European countries. Americans don't use an "ä" so IBM numbered only the American characters. This set needed only 128 numbers. Since computers work with binary numbers, it took only seven bits to count 128 numbers. A byte is made up of eight bits, so the eighth bit was left at zero. This character set is called the *small* ASCII set, the "seven bit" ASCII, or the "lower" ASCII set. ASCII stands for *American Standard Code for Information Interchange.*

After a while, the European computer companies realised that they could double the IBM ASCII set by using that leftover bit. The various European characters could be numbered. However, this was never really standardised, and the "Ø" has a value of 157 on the PC and 178 on the ST.

Since we can number the characters of a language, we can also number the keys on a keyboard. These numbers are the *keyscan code.* When you press key number 37, the keyboard tells the computer that key 37 was pressed. The computer then looks into its own internal key table and finds out which character has been assigned to that key.

This means that you can move the characters around or that you can put new characters on a key. The keyboard editor in the configuration program lets you change the keyboard character layout. If you write to Tokyo, but never to New York, you can change the $ into a ¥ sign. You still press the same key; the ST looks in its table and finds that a yen has been assigned to that key; a yen appears instead of a dollar sign.

Numbers are numbers, but the way in which we name them depends on the notational system that we are using. It is not at all "natural" that we use the decimal numbering system; by using a binary numbering system, we could easily count to 1023 on our fingers.

Notational systems are described by the number of unique characters. A binary numbering system, also called base 2, uses two digits, namely one and zero. The decimal numbering system, called base 10, uses ten digits (0-9). The hexadecimal numbering system uses 16 digits: the first ten are our "everyday" 0, 1, 2, 3-9. The decimal number ten is represented in the hexadecimal system with an "A"; eleven is B, twelve is C, thirteen is D, fourteen is E and fifteen is F (sixteen is 10).

This is not as strange as it seems. A cat is a cat, but the notational system which we use to write that word can be English, Arabic, or even invented simply for the moment; a child can represent a cat with a tin can.

Computers work with binary states: on or off. This basic notational system is called a "bit." A bit lets us describe two things because we have two information states (0,1); we can assign any meaning to them, such as on/off, yes/no, safety/fire, etc. If we cluster several bits together, then we can describe more than just two things. Two bits gives us four information states (00,01,10,11). A computer doesn't need anything more than bits. We humans, however, would not use computers if only bits appeared on screen. We insist on alphabet characters. A combination of eight bits allows 256 information states: that is enough to describe all of the letters of the alphabet (the ASCII table) and make screens readable. This cluster of eight bits is called a "byte." Single bytes make up a letter. A group of bytes makes a word, such as "home."

The Harlekin calculator (see the next section) can convert decimal, hexadecimal, and binary numbers. Try writing 157 in the calculator and convert it into Hex: it is 9D. Convert that into a binary number to see the byte representation of the yen character. When we write out a number as a word, that too is a notational system: "seven" is the written representation of 7. When we convert numbers from decimal to hexadecimal, we are only changing the way we write them. The value of the number itself doesn't change; 10 sheep are (9+1) sheep.

We recommend that you read this chapter several times: using the ASCII table system is important to the Macro-processor, the Printer filter, the Keyboard editor, and various other Harlekin parts. You will constantly meet these concepts in working with computers.

Using the ASCII Table

Click on the ASCII icon from the Harlekin menu. Click on a character; its decimal value appears in the upper right corner e.g. **$** is 36.

If you double-click on the characters in the ASCII table, they appear at the bottom of the ASCII table. You can collect a small series of commonly-used characters here. From the macro processor, you can assign a key to these so that they can be called up at a key press. To delete characters from this macro, click once in the field. The last character is deleted. To erase all of them, double-click. The ASCII macro can hold 30 characters: you also use this to hold your name.

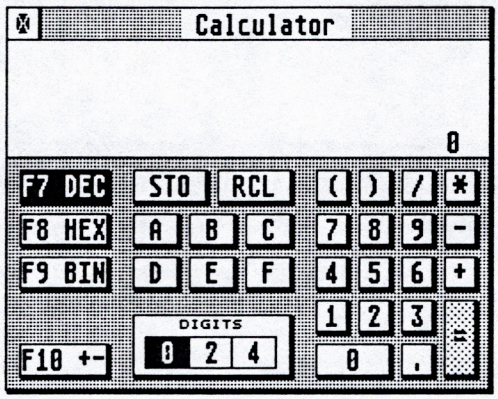
There is another way in which you can enter a character. You can type its ASCII numerical value using the **Alternate** key and the numeric keypad. First, by looking at the ASCII table, you can find a key's decimal value. Click on the yen character. For the ST, its hexadecimal value is 9D and its decimal value is 157.

The ASCII table lets you either find a character's decimal value or a decimal value's character. Now, if the **Alt + Num. Keypad** button in the Macro icon is turned on, you can hold down the **Alternate** key and type 157 on the numerical keypad. The yen character will appear in your text editor.

Calculator

Summary

- A calculator.
- Uses the familiar pocket calculator layout with a memory.
- Can show zero, two, or four decimal places.
- Displays the last four lines.
- Calculates and converts between the decimal, hexadecimal, and binary notational systems.



Using the calculator

Use either the numeric keypad or the mouse. Press **Enter** twice to clear the display. The Function keys **F7**, **F8** and **F9** switch between the various number systems: **F10** toggles the sign of the current number. **HELP** saves the current number to the memory. **UNDO** recalls the number from memory. The parenthesis symbols formulae such as (4+5)x2=14. The maximum number of nested parentheses is seven. If you have assigned a Macro key to the calculator result, then the result can be recalled into any other application.

(To assign macro keys, see **Chapter 8, Macro processor)**.

Notes on the calculator

Multiplication and division have a higher priority than addition and subtraction. 5+2x3-7/4 is performed as 5+(2x3)-(7/4). The multiplication and division processes are done first.

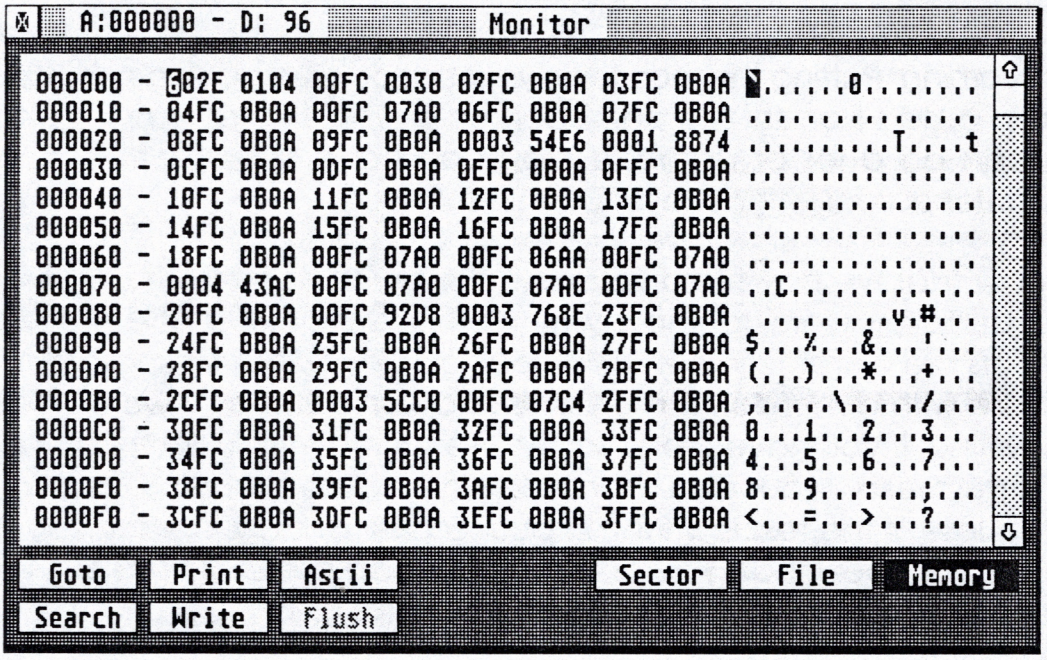
Fixed decimals: the calculator rounds up the number of decimals. Click on the number of decimals which you want to use.

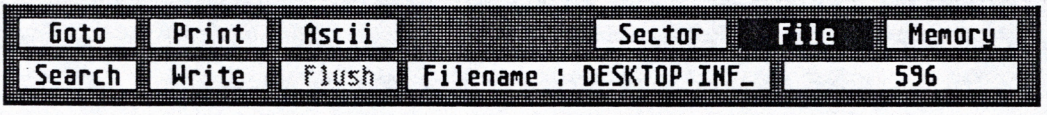
The calculator is accurate to nine digits. Since it works with binary numbers, the largest number it can use is made up of 31 binary digits (or, in hexadecimal 7FFFFFFF). This means that the largest decimal number you can use is 2,147,000,000. If you display decimals, then the number of whole digits is reduced (two decimals = 21 million, four decimals = 214,000.)

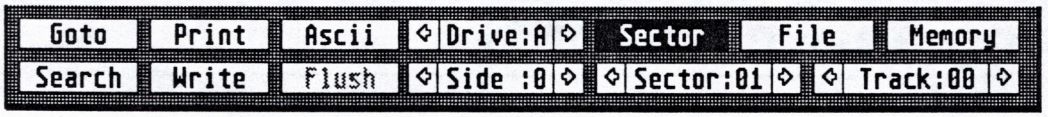
Monitor

Summary

- A monitor allows you to change bytes on disks or in the memory, directly.
- Works with sectors, files, or memory.
- Works with either text or numbers.
- Extremely fast search routines and screen updates.
- The Harlekin monitor works with "soft sectors"; it can scroll across a disk and show the contents without being restricted to only one sector at a time.







The ST uses a great deal of internal information so that it can know where to find files on disk or the memory, what kind of text to display on screen, or how it should be displayed. Practically none of this internal information is shown to the user; it is hidden from you. Most of it is technical. With a monitor, you can change any value in your computer, including the internal information. If you change even a single byte within a program without knowing what you have done you can cause major problems: options may not work and files can be destroyed. If you change any values on a disk boot sector or FAT sector, you can risk that you will never be able to read the files on that disk again.

Never use a monitor on an original program. Always make a copy and experiment on the copy. Never use a monitor on a disk which has valuable files. Format a disk, copy some files onto it, and use that for experiments. Afterwards, reformat it. Never use the monitor on your hard disk or the memory without knowing what you are doing. If you change a value of a byte, then the data on a disk or hard disk can be lost.

Last Warning! Putting this monitor in your hands is like putting a million watt laser in a kid's hands. You can open up a whole lot of things. And boy! you can do a lot of damage. You can have a perfectly successful computer career without ever using a monitor.

So, now that we have told you how dangerous a monitor can be, you must certainly want to know why we have included one in Harlekin. Monitors are extremely useful. You can quickly adapt a program to your own use with a monitor. A monitor is to a computer as a wordprocessor is to writing. If you have a program in German and your girlfriend wants it in Portuguese, you can translate the screen from German into Portuguese. If the text is written in poor English or there are spelling errors, you can change that. You can put your name into a program so that you can recognise your version with your changes.

You should be aware, though, that all these changes can be in breach of the copyright of the program's author and you should normally seek permission before modifying someone else's work.

Using the monitor

The monitor works in three different areas: sector monitor: to view and edit a specific sector on disk, hard disk, or RAM disk; file monitor: to view and edit a file and memory monitor: to view and edit the ST's memory.

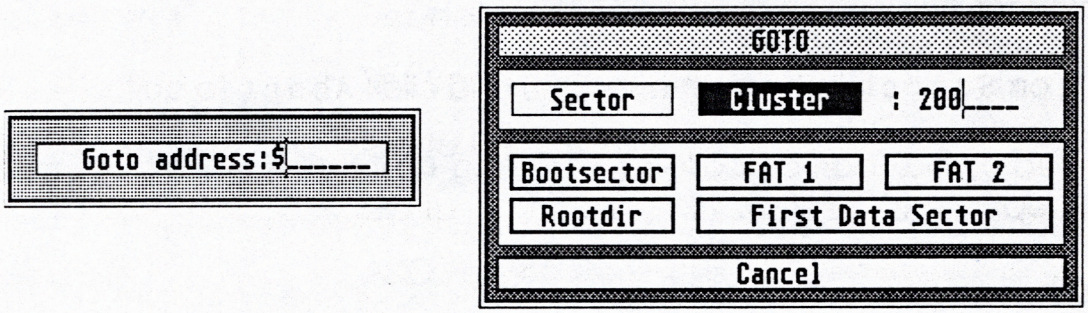
Disks must of course be formatted first. Disks with damaged boot sectors can't be edited.

Generally speaking, the left, large window is the *hexadecimal* window and the small right window is the ASCII display window. At the top, a line reports the current cursor position and the current decimal value of the byte on which the cursor is positioned.

The cursor can be moved with the mouse or the cursor arrows. Pressing **Shift** + the Up or Down arrows scrolls a whole screen. If the cursor is in the upper left or lower right corners, the left or right arrows let you scroll sideways.

The cursor is doubled up: it appears in both the hex and ASCII field. You can click in either field to use that one as the main field. In the hex field, the cursor is twice as wide; it lets you change 2-digit hexadecimal values.

Goto

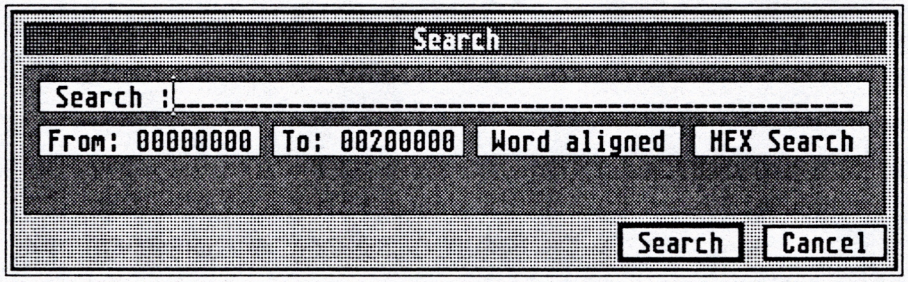


Click on **Goto**.

In the sector monitor, this produces a box which lets you go to the Boot Sector, Root Directory, the FAT 1 or 2, or lets you write a sector/cluster number in decimals. Use a **$** to work with hexadecimal values.

In the file and memory monitor, **Goto** produces a message box which lets you enter an address from which you wish to display to start. The **$** sign lets you write this in hexadecimal, by deleting the **$**, you can write in decimal.

Search



Lets you look for a "text string" (words) or a series of numbers. You can decide the range in which to search by changing the **From** and **To** lines. By default, the **From** value will be the current position and the **To** will be the last possible position.

If **Word aligned** is selected, then the beginning of a word must be on a word boundary. By selecting **Hex Search**, you can search in hexadecimal. Only whole hex bytes can be found, you can't simply search for "D."

Click on **Search** to begin the search, and click **Abort** to quit.

The search box can be called by pressing **Control** + **F**. **Alternate** + **F** repeats the search.

Print

Print lets you print. A box asks you what will be printed.

ASCII

ASCII toggles back and forth between the right-hand display of only the lower 128 ASCII or the complete 256 ASCII table. It can be less confusing not to see all data.

Write

To protect you from accidentally changing anything, the sector and file monitors will change the bytes only after you have clicked on **Write**. The changes are stored in a *buffer* (in memory) and are only actually written to the disk either when you have scrolled out of the field, clicked **Write**, or clicked on **Flush**.

Flush

This flushes (clears out) the contents of the write buffer and writes it to the disk or file. If you have made changes, then they will be written to the disk.

Bookmarks

Often, you will need to go back and forth between sectors which are spaced far apart. With a bookmark, you can note a position and find it again. Harlekin has four bookmarks. To set a mark, press **Control + 1, 2, 3,** or **4** (the numbers above the keyboard). To find a bookmark, press **Alternate + 1, 2, 3,** or **4**. Each mode in the monitor has four bookmarks.

Keyboard Shortcuts

Control+F	Search
Alternate+F	Repeat Search
Control+1-4	Set Bookmark
Alternate+1-4	Go to Bookmark
Control+G	Go to
Control+A	ASCII on/off
Control+P	Print

Sector Monitor

To enter the sector monitor, first click on **Sector**. The monitor shows a whole sector. Remember, however, that two sectors make a cluster which is the smallest storage unit. If you are looking at a disk, then the bottom right lines report the disk side, sector, and track. These can be scrolled by holding the mouse down in the arrows. If you are looking at a hard disk or a RAM disk, the bottom right line reports the current sector and cluster number.

To change drives, first select the drive by clicking on the arrows on the left or right of **Drive:X**. Then click on the word **Drive** to make the monitor go to that drive.

To change disks, first go to **Memory**, insert the next disk, and then go back to **Sector**. It is important that you do this; the ST may not recognise that the disk has been changed. By going to the memory editor and then back again, the ST is forced to check the new disk.

File Monitor

Go to the file monitor by clicking on **File**. A selector box appears and you can select which file to display. The lower line notes the current file name and byte length.

Files remain "open" until you switch to the sector or memory monitor. Don't use other Harlekin tools to work with an open file. Close a file by switching to the sector or memory mode or by selecting another file. Don't remove the disk from the drive while working on a file.

Memory Monitor

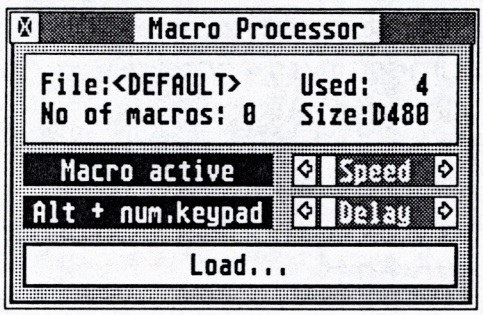
Go to the memory monitor by clicking on **Memory**. The memory monitor, in contrast to the file or sector monitor, writes instantly to the memory. There is no buffer. For non-programmers, the memory monitor should not be used. You can easily crash your system.

For more information about ASCII, see **Chapter 5: ASCII Table.**

Macro Processor

Summary

- Lets you use macros with the keyboard.
- Uses both text and commands.
- Uses a new principle, which allows greater compatibility with other programs.
- The following can be assigned to macros: the Harlekin modules, the ASCII table characters, calculator result, current date/time, resets, warm boots, and cold boots.
- A dynamic macro allows you to record and play back a series of key presses.



What is a macro? Normally, pressing a key creates a single character. The keyboard can allow you however to put a number of characters on a key. Furthermore, a number of characters can be assigned to combinations of keys. If a single key produces one character, then a "macro" produces a number of characters.

These characters can be single letters, words, sentences, paragraphs, or commands. You can write a macro which places a Yen character, your name and address, or the standard business letter opening form. You can make macros which write the path line in the file selector space, such as `D:\CALAMUS\DOCUMENTS\*.CDK`. You can also make macros which tell the cursor to move down five lines, go sixteen spaces to the left, and delete whatever is there and insert your name. If you use Wordplus, you can create a macro which opens the `Search` option, writes the word `Alison`, and starts searching for her name. Macros can be made for nearly all programs which allow keyboard commands. Macros can call up the Harlekin programs and macros can "reset" the computer.

The Harlekin macro processor is the most advanced macro tool available, anything can be assigned.

To make a Macro

Macros are created in the configuration program. (See **Chapter 17: Configuration Program**.)

The Macro Processor Icon

Click on the Macro icon on the Harlekin menu.

`Macro active` lets you turn the macros off or on. The `Speed` slider box lets you set the speed at which macros are carried out. The `Delay` box lets you change the time after you press the key when the macro is started.

`Alt+num.keypad` lets you turn off or on the ability to create ASCII characters using the numeric pad - normally, by pressing `Alternate` and writing an ASCII decimal number value on the numeric keypad, you can enter any ASCII character but this can be turned off.

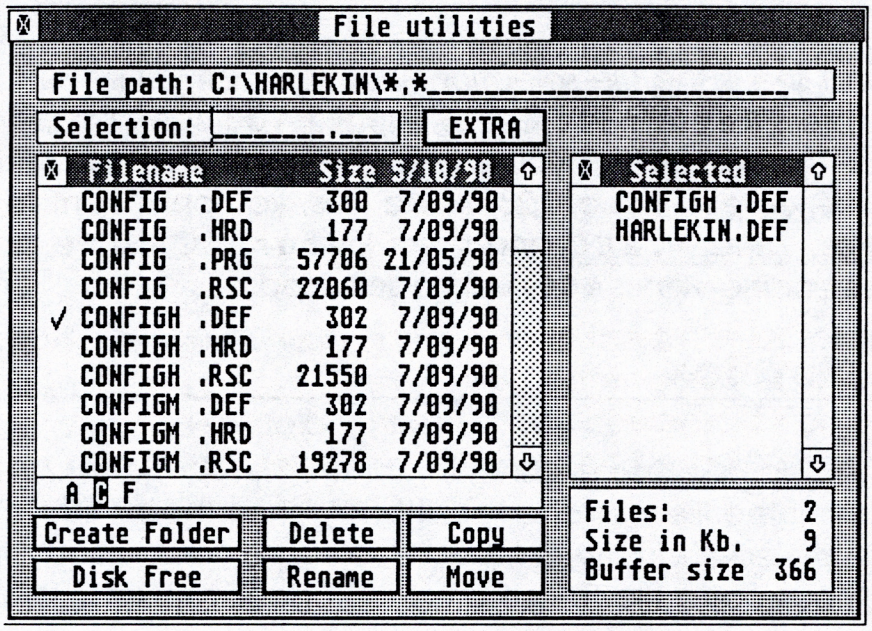
`Load...` lets you load various macro files. You can create various sets of macros for various programs.

Note: As noted in the introduction, Harlekin and Le Redacteur, the French wordprocessor, compete with each other with macros. Both can block each other out in different situations. Le Redacteur can use its own text macros but the Harlekin text macros are not available.

File Utility

Summary

- Copy, move, rename, and delete files.
- Show files by name, size, date, and time.
- Create and delete folders.
- Show the space on a disk (total, used, and remaining bytes).



The file utility uses most of the principles from the standard ST file selector. The differences are extra functions. Instead of being able to select only one file, the Harlekin file utility lets you select a number of files at one time, including files in different drives and folders. After you have selected all of the different files, you can then copy them onto other disks or into other folders. You can also delete the files or rename them. You can also move the files: instead of being copied, the original file is deleted and placed in the new location. This is extremely fast, especially if you do this within a single drive or partition.

Using the File Utilities

File path

The top line is the *file path*. This shows the folder path. As you enter a series of nested folders, the various names appear here. You can exit each folder by clicking on the upper-left close box above the file window. If you have entered several levels of folders, you can exit all of them at once by double-clicking on the close box.

File Selection Line

The second line is the *file selection line*. You can write the file's name here and press **Return** in order to select it. You can also use a *mask* to select files. This means that you use a filter to show only a particular kind of file. For example, out of 123 mixed files, you only want to copy the accessories. Write ***.ACC** and press **Return**. Only the accessories (those files ending with **.ACC**) will be selected.

File Display Box

On the left side, the files are shown. The name, size, and date is shown on the right. If the file was changed today, then the clock time is shown instead of the calendar time. Files are selected by pointing and clicking with the mouse at a file. These are then check-marked. If you want to change a selection, click on it again.

Selected Files Box

On the right side, the selected files are shown. If you don't want to select these files, click on the file to de-select it. To de-select all files, click on the upper-left button in the selected files box.

At the bottom, the total number of selected files is shown. Furthermore, the amount of space which the files occupy on disk is shown. This number is *not* the same as the file size. Disk storage is made up of clusters which are 1024 bytes large. For reasons of efficiency, a cluster is used "all or nothing." If a file is only 137 bytes large, it occupies 1024 bytes on disk. If a file is 1025 bytes large, it uses one whole cluster for the first 1024 bytes and a second whole cluster for the remaining single byte. It is more useful to know the actual amount of storage space which will be required for a file transfer. The last line shows the amount of RAM memory which is available for copying. Harlekin uses all of the available memory, including that which is allocated but not used by the other Harlekin modules.

Drive buttons

Below the file selector window, the active drives are shown. Click on a drive (`A`, `B`, `C`, etc) to switch to that drive.

Folders

You can create a folder by writing its name in the file selector line and then clicking in `Create folder`. You enter a folder and see its contents by clicking on the folder name. If you double-click on a folder, a message pops up. If the folder is empty, it can be deleted. If your ST uses TOS 1.4, the folder can be renamed.

File buttons

`Delete`, `Rename`, `Copy`, `Move`: After you have selected files, you can use these buttons. Any action is applied to all of the selected files.

`Delete`: this button deletes the files. Remember that a deleted file is lost forever. For safety, a confirmation message appears. During the deletion process, a window shows you which files are being deleted. To quit during the process, point and hold down the mouse in the `Abort` box. You must hold down the mouse until Harlekin stops deleting. In any case, at least one file will be deleted.

`Rename`: this button renames the selected files. A window appears and the old name is shown. Write the new name in the lower line and press `Return`. If you chose more than one file, this repeats itself until all of the files have been re-named.

Copy: this button lets you copy the selected files. After you have selected the files, you go to the destination driver or folder and then click **Copy**. If files conflict, you can either overwrite them, skip, or abort.

Move: the **Move** button copies the file into the destination position and then deletes the original. You don't have to go back and delete the old copy. If you move a file from one folder to another on the same disk, this is very fast: the file isn't copied and deleted; instead, the ST makes a note on the disk that the file is to be found somewhere else.

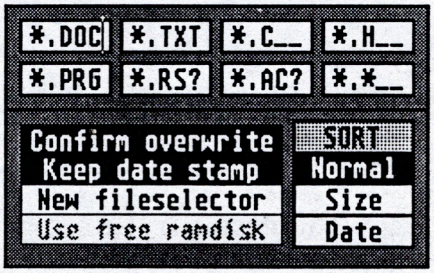
Copying files with only one drive

First, select the files and then remove the source disk from drive A. Insert the destination disk and click on the **A** at the bottom of the file selector window. The new file name is written onto the disk and a black dot appears to the right of the path line. This notes that the disk has been changed. Click on **Copy**. Message boxes will appear and tell you when to change disks. Harlekin uses all of the available memory to copy files.

Disk Free

Checks the space on the disk and shows the used, free, and total byte space.

Extra



This button lets you use masks and various other options. The pre-defined masks work on the touch/exit/effect principle: you click on the button and it immediately exits the **Extras** box and effects the changes in the selector window. You can change the masks: use the cursor arrows to move from box to box and **Backspace** or **Escape** to delete. Write your own masks. To save the changes, click on the **!** in the main Harlekin window and click on **Save Settings**.

Sort: this option lets you sort the files: **Normal** shows the files alphabetically; **Size** shows the files by largest first; **Date** shows files by most recent first.

Confirm overwrite: if this is selected (white text on black background), Harlekin will always ask you to confirm a possible overwrite of an old file by a new file with the same name. If you switch this option off, then files will be overwritten without notice.

Keep date stamp: if this is selected, then a copy of a file will have the same date as when it was originally created, instead of the date on which it was copied.

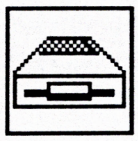
New fileselector: Harlekin includes an alternative file selector to replace the standard ST file selector. This file selector will appear whenever you need to load or save a file.

Advantages of the Harlekin file selector: name, size, and date are displayed; you can double-click the up/down arrows to jump to the top or bottom; file masks can be used; files can be sorted; you can have masks in the file selector line; drives can be changed by a mouse click.

If you do not want to use the Harlekin file selector, click on **New fileselector** so that it is black text on a white background.

Tips and tricks

You can delete a whole group of files at one time without the risk of deleting other files. Simply use a mask. Write ***.BAK** in the file selection line and press **Return**. All of the **BAK** files are then selected. These can then be deleted all at once.

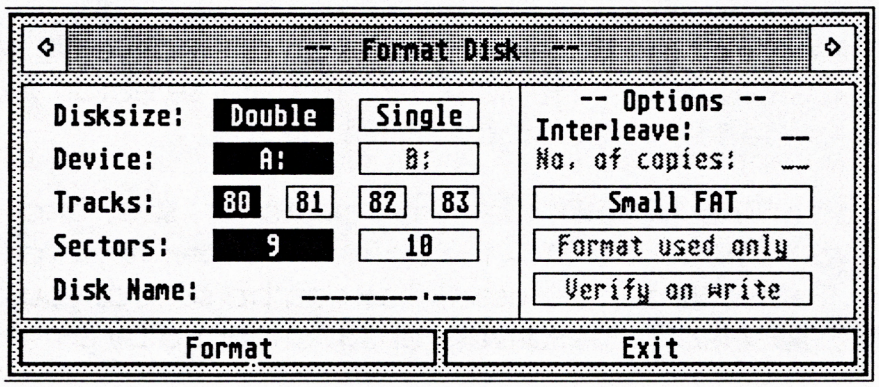


Disk Utility

Summary

- Copy and format disks.

To go from formatting to copying or vice versa, click on the right or left arrows at the top of the window.



Formatting Disks

A blank disk can be compared to a large roll of paper from a factory. It is entirely blank and un-divided. No-one can use an industrial paper roll; it needs to be cut into sheets and lines have to be drawn onto it. The size of those sheets and lines will depend on the purpose of the paper; newspapers use larger sheets, notepads are smaller.

Formatting a disk creates distinct magnetic spaces on the surface into which information is stored. The disk tells the ST the kind and number of spaces and the ST is able to direct the drive head to those spaces and find your documents and programs.

In practice, you place a disk in the drive, click on **Format** click **CONTNUE** and, after a few minutes, the disk is formatted.

You can also select single-sided or double-sided formats. You can select the number of sectors per track (9 or 10) and the number of tracks per side (from 80 to 83). Many drives can't format 83 tracks, however. You must test your drive. Insert a blank disk and try to format it to 83 tracks. If it can't, then the drive head hits against a mechanical stop and a "clack" noise can be heard. Don't let this go on to long; the drive head can be knocked out of alignment. Try formatting the disk with a lesser number of tracks until you find your drive's limit.

80 tracks/9 sectors is the standard ST format. We recommend that you stick to this: you will never have problems and your disks can be read by any ST. Extended formats with more tracks and sectors will let you store more bytes per disk (up to 100 kilobyte more). This can be safely used if you use these disks only on your system and mark them clearly on the label. This keeps you from confusing the various formats.

The **Disk Name** line lets you give the disk a name (called the *volume label)* which will later appear in the **Show Info** box from the desktop. This option can be used to note the disk's format.

You can enter an interleave value in the **Interleave** field from 1 to 10. This determines the amount of interleaving on the disk. Interleaving is a method of speeding up the read/write speed. Normally, the sectors lie in a circle in the track and are numbered in order: 1,2,3,4,5,6,7,8,9, and then again 1,2,3, etc. in the next track. The drive head reads sector 1 and sends the information to the computer and then goes on to the next sector. Many times, however, the computer can't process the information quickly enough to be able to receive the information from the next sector before it moves past the head.

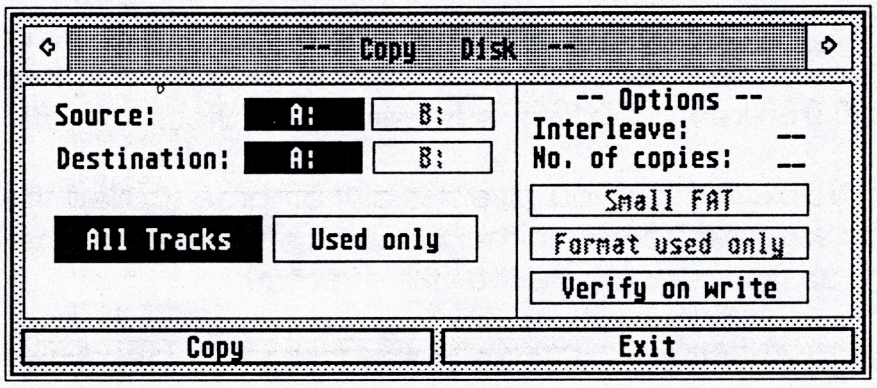
So the drive has to turn a whole turn to get to sector 2 again. It can take 18 turns to read a single track. By placing the sectors apart from each other, the computer has time between each sector to process the information and be ready for the next. For example, the sectors are placed: 1,6,2,7,3,8,4,9,5, and back to 1 again. The drive head "hops" over the sectors and is able to read a whole track in only two turns.

Tip: Blitter TOS uses "spiral" formats (also called "snail" formats). If you have a Blitter TOS, don't use interleaving. The spiral format is faster. If you don't have a Blitter TOS (STs made before November, 1987), then experiment with various interleaving factors and see how long it takes Wordplus to read a long file.

At the start of a disk, several sectors are used to hold information about the disk; this makes up the *FAT* (File Allocation Table). The FAT normally uses 2 X 5 sectors. If you click **Small FAT**, then Harlekin looks at the number of tracks and sectors and calculates a minimum number of sectors for the FAT. This will give you 2K more disk space.

If you don't understand interleaving or the small FAT, then leave the space blank and don't worry about it.

Copying a Disk



Source is the original disk from which you want to copy. **Destination** is the new disk to which you want to copy.

If you have one drive, insert the source disk first and start the copy process. Harlekin uses all of the available memory to hold the contents of the disk. Harlekin will tell you how many times you will need to switch disks and when to switch disks. If you are within a program, such as Wordplus, then much of the memory will be used up by Wordplus. By exiting Wordplus, more memory is available for copying and the copying will be faster.

If you have two drives, place the disks in the drives, notify Harlekin which drive is the source and destination and click **Copy**.

All Tracks vs. **Used only**: if **All Tracks** is selected all the tracks will be copied no matter whether they actually contain data. **Used only** however will only copy those tracks which are actually used on the source disk. This will speed up the copy process especially when copying disks which only contain a few files.

Before Harlekin starts writing to the destination disk, it checks whether the disk will need to be formatted. If so, Harlekin will automatically format the tracks while writing.

As mentioned above the destination disk will be automatically formatted if necessary. Normally all 80 tracks will be formatted even if `Used only` is selected. Selecting the button `FORMAT used only` will suppress the formatting of unused tracks. This is generally *not* recommended except in *very rare* cases. A disk copied in this manner will not be writeable.

You can choose the number of copies to made of the source disk by selecting `No. of copies`. Enter the number of copies (up to 99).

`Verify on write` checks each sector as it is written and makes sure that the file was correctly written to the disk.

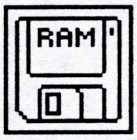
During the Formatting/Copying process a screen appears and shows the progress. If a sector is bad, it is "marked bad" and shows up as a grey sector. "Marked bad" sectors are automatically ignored by the computer. The disk can be used. It is however a sign of a bad disk, and you it is recommended that you throw the disk away.

Harlekin checks the serial numbers of the disks and makes sure that you insert the correct disks. If you accidentally insert the wrong disk, it warns you and waits until you have inserted the correct disk.

Tips and Tricks

You should always use the "write protect" tab on the back of the disk when you are not formatting or writing to a disk. It prevents accidental formatting/writing onto a disk. It also prevents virus infection of a disk.

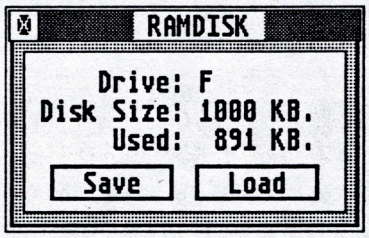
Blitter TOS uses "spiral" formats (also called "snail" formats). If you have a Blitter TOS, don't use interleaving. The spiral format is faster. If you don't have a Blitter TOS (STs made before November, 1987), then experiment with various interleaving factors and see how long it takes Wordplus to read a long file.



RAM disk

Summary

- Reset-proof RAM disk.
- Auto-load RAM disk.



What is a RAM disk?

When you are working with the ST, your data is moving back and forth between different media: disks, hard-disks, or RAM memory. When your files are on disk, they are safe: they can't be lost. However, the transfer speed is very slow. The disk head has to find the right sector; only so many bits per second can be read, and only so many bits at a time can be transferred into the computer.

When the files are in the computer's RAM memory, they can be lost if the computer loses power. They evaporate (this is why it is called "volatile" memory). The advantage is speed. Moving files in the RAM is a question of moving electrons.

A RAM disk is a simulated disk drive (this is also called a *virtual* or *emulated* drive. Part of the ST's large RAM capacity is blocked off and given the properties of a disk drive. Files can be stored and retrieved from this "pseudo-drive." This is an extremely fast way of working with files and programs. Harlekin itself is *RAM resident*; it sits in the RAM memory. This is the reason that it appears so quickly on screen. Press a key and the various modules pop onto the screen.

The only disadvantage of RAM disks are their volatile nature: if a program bombs, you must reset the computer and the files disappear. If the cat pulls the plug, your files and cat become a puff of smoke.

Harlekin's RAM disk protects you against the first problem: it is reset-proof. If a program bombs, press the reset button. Harlekin survives the reset: none of the files are lost. As for the second problem, loss of power: no RAM disk can survive a power loss. Therefore, you must regularly save your files from the RAM disk onto a disk or hard disk.

Using the RAM disk

With the configuration program (**CONFIG.PRG**) select **Ramdisk** on the **Settings** menu; you can decide the size of the RAM disk and which drive it will simulate. For example, 250 kilobyte in Drive E. You can use any drive from C to P. The size depends on the amount of RAM in your ST. Maybe add together the total kilobytes of the files and programs which you will put in the RAM disk and then add 20% more for a margin.

To install a new drive icon

From the desktop, click once on the **A** drive icon. It turns black. From the **Options** menu, click the **Install Disk Drive** option. A message box appears. Change the drive from **A** to **E** (use capital letters) and give it a new name (this doesn't matter, say **RAM DISK**). Press **Return**. The new drive usually shows up behind a window. If you want to avoid creating this drive icon every session, insert your boot disk and click the **Save Desktop** option from the **Options** menu.

Auto-loading RAM disks

An auto-loading RAM disk is very practical. In the morning, you turn on your ST, make a cup of coffee, come back, and your RAM disk is ready and filled with the files and programs which you usually need.

Normally, auto-loading RAM disks will have a list of files to be loaded into the RAM disk. The files are scattered all over a disk and it can take quite a while to find each one and copy them into the RAM disk. This leads to coffee breaks.

The Harlekin RAM disk uses a unique method of auto-loading to speed up the auto-loading process. In your first work session, you copy the files and programs into your RAM disk in the normal way: either using icons from the desktop or with the Harlekin File utility. At the end of the session, you open the Harlekin menu, click on the RAM disk icon, and click on **Save**. This saves the contents of the RAM disk onto disk as a single file and deletes the original files from the disk. When you start the ST again, it is much faster to load a single file into the RAM disk.

You can decide which setup file is to be auto-loaded using the Configuration program (**CONFIG.PRG**) - choose **Ramdisk** under the **Settings** menu and enter the **File:**.

This means that your files are only accessible from within the RAM disk. If you want to add or delete files, you must load the RAM disk.

You can create, save, and load various RAM disk files (normally with extension **RMD**). One could be your word processing files. Another can be your drawing program and graphics tools. Another can be your database.

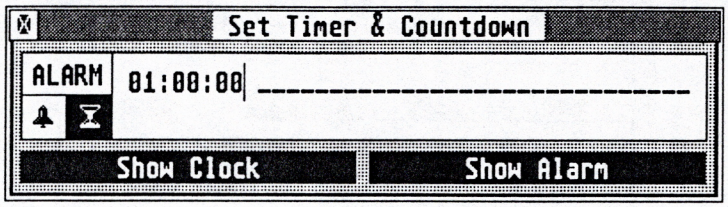
First, load the word processing files into the RAM disk. Use the **Save** option and call it **WP.RMD** (the name and extension is up to you). Throw the contents into the wastebasket and copy the drawing program into the RAM disk. Save this as **DRAW.RMD**. In this way, you can make various setups.

You can't save empty RAM disks. Use the **Load** option in the RAM disk icon to load your RAM disk files. You can't load two RAM disk files into one RAM disk; the current one is erased and the new one is loaded. You can't load RAM disk files into the RAM disk which aren't Harlekin RAM disk files.

Clock

Summary

- There are three clocks:
  Normal time display.
  Alarm clock.
  Countdown clock.
- The alarms use a message and a tone.



First, you must set the ST's time correctly. You can set the clock from the **Control Panel**. STs do not keep time very well, they tend to drift several seconds per day. If you need to keep the precise time, you must reset the clock every day. It normally doesn't matter if the clock is several minutes wrong.

Click on the clock icon in the Harlekin menu. To turn the clock on or off, click **Show Clock**. If it is black, then the clock is in the upper right corner of the screen.

If you need to catch the bus at 16:00, then use the alarm clock. Click on the clock icon in the Harlekin menu, click on the bell icon, enter the time and write **Bus!** alongside. Ensure **ALARM** is selected; if **Show Alarm** is also selected, a bell will appear in the upper-right screen corner. If another clock is active, then both will be shown alternately. You may have to de-select and re-select **Show Alarm** to obtain the correct effect. Remember to turn up the sound.

If you want to work for only three hours, then use the countdown timer. Click on the clock icon in the Harlekin menu, click on the hour glass icon and enter the time and a message **Time to quit!** Make sure that **ALARM** is selected.The counter counts down backwards from three hours and gives an alarm. If **Show Alarm** is also selected, an hour glass starts to countdown in the upper-right screen corner. If another clock is active, then both will be shown alternately. You may have to de-select and re-select **Show Alarm** to obtain the correct effect.

To remove the countdown clock or the alarm, click on **ALARM** so that it turns white.

The alarms are reset-proof; if the ST bombs, they are not forgotten.

Tips and tricks

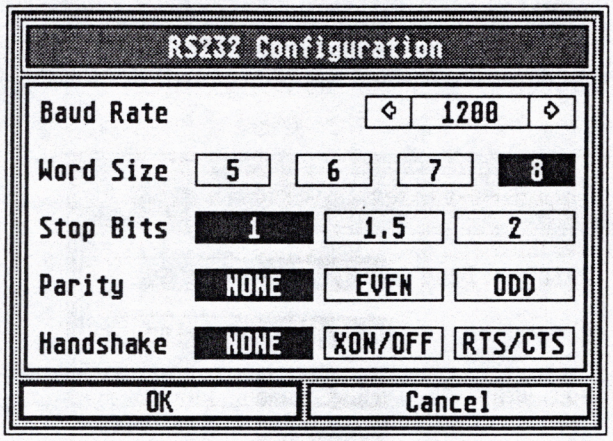
If you change either the alarm clock or the countdown timer, you must turn the **ALARM** button off and on again so that Harlekin will note the new time. Otherwise, it will continue with the old alarm times.

The clock can serve to show whether the computer is frozen. Calamus, for example, sometimes freezes during an operation. If the clock is running, it will stop when the computer freezes and then you know what to do ...!

RS232

Summary

- This defines the settings for the RS232 serial port.



This is necessary when using a modem or when you have connected your ST to another device or computer with the serial port. When two computers are serially connected, both must use the same settings. Most problems are due to incorrect settings.

You can change: the **Baud Rate** (number of bits per second), **Word Size** (number of bits per word), **Stop Bits**, **Parity** and **Handshake**.

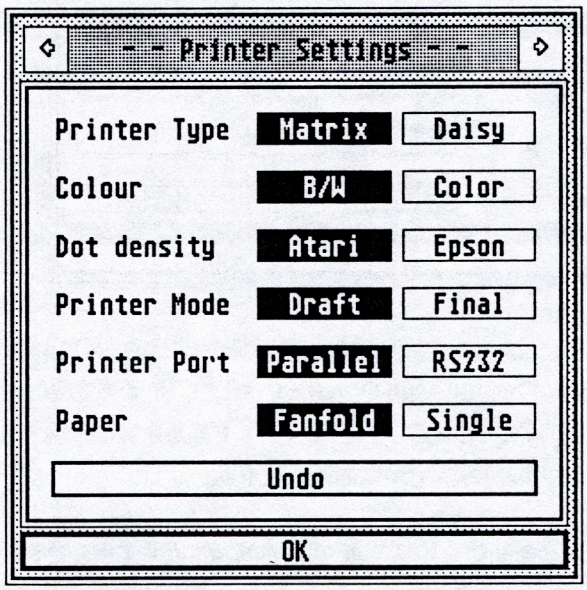
The settings will depend on what you are transferring, how you are transferring it, and to what you are transferring. All of this can vary widely. Check with your modem manual etc. for the correct settings.

The settings can be saved by clicking **Save Settings** in the System Information box (reached via the **!** icon).

Printer & Spooler

Summary

- The Spooler lets you print out files without slowing the ST.
- Instead of waiting for the printer to finish printing a file, you can immediately continue working.
- The Printer Settings lets you set up the printer.



The Printer Settings

This box lets you set up your printer.

`Printer Type` (Matrix/Daisy): most printers are matrix (9 pin or 24 pin).

`Colour` (Black and White or Colour).

`Dot density` (Atari/Epson)

`Printer Mode` (Draft/Final): prints in draft or Near Letter Quality (NLQ).

`Printer Port` (Parallel/RS232): uses the parallel or serial (RS232) port.

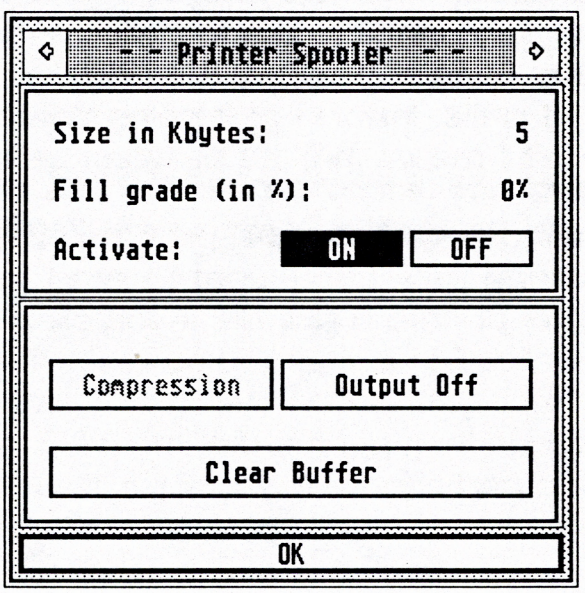
Paper (Fanfold/Single): is the paper single-sheet or fanfold?

Click on the proper fields for your printer. Check with your printer handbook. Save the settings with the **Save Settings** option in the System Informations box (**Chapter 16**).

The Printer Spooler

Your printer has its own RAM memory; this is a small buffer of about 2 to 8 kilobytes. One kilobyte is enough to hold about 1/3 of an ordinary page. When you print a file, it is sent to the printer. As you well know, the printer prints very slowly in comparison to how fast the files can be sent from the ST to the printer. The printer uses a buffer to hold the information while it is printing. But files are rarely small; the printer will hold as much as it can and the ST waits until that is finished. More of the file is then sent.

This is done automatically. Your ST is basically turned into an external memory for the printer. This is especially frustrating if you are printing large documents of twenty or thirty pages; you can't use the ST until it is finished.



The printer spooler solves this problem. It assigns a block of the ST's RAM memory as an extra buffer for the printer. Your file is sent from the word processor to the spooler buffer. From there, it is sent to the printer's own buffer. This means that once the file has been sent entirely to the spooler buffer, you can continue working on other files, or even quit the program.

The spooler can "queue" files. This means that it can hold more than one file; you simply send one file after the other to it and it holds all of them and prints them one by one.

The spooler can hold anything that you send to the printer: text files or graphics.

To send files to the spooler, simply click on **PRINT** from your word processor, drawing program, or the Harlekin editors. The spooler intercepts the file on the way to the printer. The spooler is a *fire and forget* affair; you set the size once and for all, and from then on, in the background, it takes care of printing.

As noted above, the spooler can "queue" files; you can send all of the files to the printer at the same time; the spooler collects all of them and prints them out one by one while you work on other things.

To get to the spooler, firstly set up a buffer size using the configuration program, save settings and re-boot. Now click on the Printer icon on the Harlekin menu and click one of the arrows at the top of the **Printer Settings** box that appears.

A further ability of the spooler lets it send files to disk instead of the printer. This is immensely useful. To use this, click on the **Output Off** button in the Printer Spooler box until it is selected. Go to your word processor and print a file. Instead of it being printed, it is kept in the spooler; **Output Off** means that the file won't be sent out.

Go back to the spooler window and click **Output Off** again. A message appears and asks if you want to send the contents of the spooler to the printer or onto a disk file. If you click **Printer**, then it starts to print. If you click **File**, then you can save the file onto a disk. If it is a Wordplus file, then you can take that disk and send it to another person by mail. He can then put the disk into his ST, double-click on the file from the desktop and choose to **Print** it. It will then print in proper Wordplus format!

Another example: Superbase printing tasks, such as mailing lists, can be saved onto disk. To print them out, simply double-click on the icon from the desktop and select **Print**. You can print these files without having SUPERBASE or WordPlus in the computer.

Setting up the Spooler

In the Harlekin configuration program (**Chapter 17**), you can decide how large the spooler will be. If you work with large files, you might create a large spooler. But the spooler uses RAM memory and less memory will be available for you. If your documents are usually ten pages, with 3 kilobyte for each page, that means that you need a 30 kilobyte spooler.

Save the settings, re-boot the computer and return to the Spooler box from the Harlekin menu. The first line reports the size of the spooler (30 kilobyte). `Fill grade` reports how full it is; if you are printing a 15 kilobyte file, then it will be 50% filled. As it prints out, the percentage changes.

`Activate` turns the spooler `ON` or `OFF`.

`Clear Buffer`: if you decide to quit printing and need to remove the file from the spooler, use the `Clear Buffer` button. This erases the file from the spooler.

If you turn off the ST or printer while files are in the spooler, they are lost.

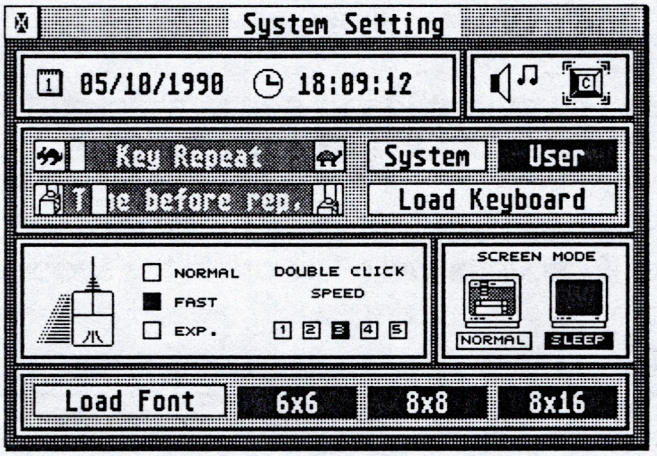
Hints and Tips

The spooler will confuse the Atari laser printer. You must either turn off the spooler or not use it at all if you have an Atari laser printer.

Control Panel

Summary

- Replaces the standard ST control panel.
- Reset-proof clock.
- Keyboard layout can be selected.
- Mouse speed.
- Screen protector.
- Systems font or user designed fonts.



Using the Control Panel

The first line has the calendar and clock. Click on these to change them. Either use the **Backspace** or **Escape** key to erase the entry. Write the new time/date and press **Return**.

Speaker / Key Press

These buttons (top right) let you decide if the ST's beep will sound or not when a message box appears and on a key press. If these are normal colours (not greyed), then the ST beeps when a message box appears or when a key is pressed. To turn this off click on them; they turn light grey.

Key Repeat

When you hold an ST key down, it begins to repeat itself after a while. To change this "repeat" speed, move the slider bar to the right or left. You can either click once on the rabbit/turtle and drag the white box, or hold the mouse button down on the rabbit/turtle icons.

Time Before Repeat

The ST keys begin repeating only after a short pause. It is very important that you set this to your typing speed. Many users never learn to adjust these values and always complain about the ST keyboard. It's their own fault; they didn't read the manual...

Keyboards

`System, User, Load Keyboard`: your ST has a standard system keyboard. Harlekin lets you use other keyboard layouts or make your own. In the configuration program (**Chapter 17**), you can create new keyboards and save them.

On the Harlekin disk, there is a collection of keyboards (all ending with `.KEY`). To select a keyboard, use these buttons in the control panel. Click on `System` to use the ST's standard keyboard. Click on `User` to use a keyboard which you have defined as the Harlekin standard keyboard. If you want to use other keyboards, click on `Load Keyboard` and select the keyboard from the file selector.

Tips and tricks: this keyboard selection is very useful because keyboards can be read in at any time. Early versions of Calamus, for example, had a keyboard protection system. The program only functioned on STs in a particular language. In Scandinavia, Calamus only functioned on Swedish STs, yet it was sold to be used on Danish, Norwegian, English, and German STs. Harlekin solves this problem: you load a Swedish keyboard and start Calamus. Calamus looks once at the keyboard, sees that it is Swedish, and then will work. So then you load your Danish keyboard and everything is okay!

Mouse Speed

You can change the speed of the mouse. `NORMAL` is the standard mouse; `FAST` is faster. `EXP` (exponential) makes the mouse move according to the number of pixels per second which you move; it goes faster or slower, depending on how quickly you move the mouse.

With graphics programs, you should use the exponential mouse. If you want an even faster mouse, use a second mouse accelerator, such as SPEEDMOUSE.PRG, along with the Harlekin one.

Screen Mode

Click on SLEEP and the monitor image will turn off after five minutes if the mouse or keyboard haven't been touched. Touch the mouse or keyboard to restart the screen.

Load Font

The last options are for the system fonts (see **Chapter 5: ASCII**). In the configuration program (**Chapter 17**), you can create, change, and edit the system font. By clicking on Load Font, you can load these fonts.

There are three buttons: 6x6, 8x8, and 8x16. These are the different sizes for the system fonts. Your ST system font is made in three sizes. The 8x16 is the normal size, this is the font that is used in the menus. The 8x8 size is rarely used; if you use a program that displays fifty lines per screen (such as Wordplus in Graphics mode, K-Spread, etc.), then the 8x8 size font is used. The 6x6 size is used for the icon names (Disk drive, Waste Basket, etc.) and the small characters in many of the Harlekin screens (for example, in the Control Panel, the mouse accelerator is shown in 6x6 size.)

An example: go to the configuration program and click on System Fonts from the Settings menu. Click on the size (8x16). Double-click on the capital E; it appears in the editor box. Change it so that it becomes a box. Export the font with a new name (TEST.FNT). Go to the control panel; select 8x8; load the TEST.FNT. Notice that the small Es in SPEED have changed.

This lets you change the screen display. If a character is wrong, or you want to make your own font, this lets you do it. But this is only for your *screen*; it doesn't change what is printed.

Notes

The settings are reset-proof; after you make changes, they remain until you turn off the ST. Almost all of the changes which you make in the control panel can be saved by clicking **Save Settings** in the Systems Information panel.

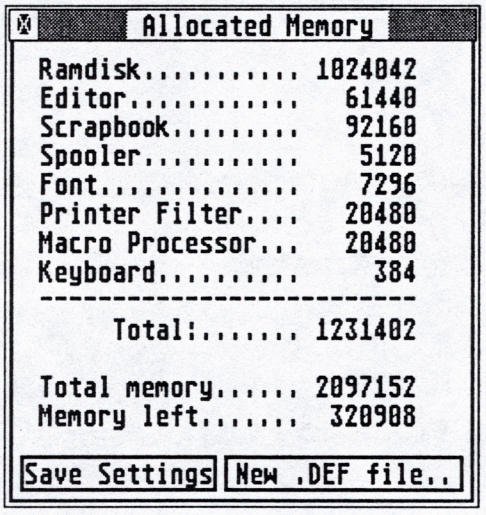
By deleting the Atari control panel and using the Harlekin panel, you can save 20 kilobytes of memory. You don't need to have a separate Atari control panel, nor such programs such as **ROCP.ACC** or **GETDEFS.ACC**.

On an ST without a battery-backed-up clock, Harlekin will appear at boot time and ask for the date and time. Thereafter, it keeps the date and time, even through a reset.

Information

Summary

- Displays the allocated RAM memory for each part of Harlekin.
- Shows which modules are reset-proof.
- Shows the total allocated memory, total system memory, and the amount of free memory.
- System settings can be saved.
- New system setups can be selected.



Saving your Settings

If you have changed any settings (for example, the mouse accelerator), and wish to keep these changes, then click on **Save Settings**. The changes will be saved directly to the **HARLEKIN.ACC** file.

The following can be saved this way: name of the current **.DEF** file, the position and size of Harlekin windows, the last folder which each module used,the Page Layout settings, settings from the editor's **Options** menu (page width, Text/ASCII mode), communication program's telephone list and call/hangup strings. Scrapbook's **Sorting** button (And/Or/Nor) and the text search words, macro processor setup, file Utilities setup, clock on/off, RS232C settings and printer settings and Control Panel setup.

Using several .DEF files

A .DEF file (definition) is a set up for Harlekin; it defines the Harlekin system. Your main (or only) one should be called HARLEKIN.DEF. You may want to have separate setups, however. This can be especially sensible with a 520ST, where you may sometimes want a RAM disk, but at other times, need to use the memory for other programs.

If you share your ST with another person, each can make his or her own definition files. The speed of the mouse, the clock, etc can be "personalised." To do this, make a setup in the configuration program (**Chapter 17**). Save it as ANDREAS.DEF (with your name). Or, if a DEF file has a 200 kilobyte RAM disk, call it 200RAM.DEF. Or, NO_RAM.DEF.

To switch from one DEF file to another, go to the Systems Information icon and click New .DEF File. Now you must choose whether the ST should reset itself or cold boot itself. If the new DEF file only has different settings, then a reset is enough. But if the new DEF file has a different RAM allocation for the modules, or changes in whether they are reset-proof, then the system must be cold booted.

A file selector then appears; you choose the DEF file, and press OK. The ST will reset itself and reads in the new DEF file.

When you reset or cold boot the ST, everything will be erased from memory. Any open files or changes in the Scrapbook will be lost. You must save everything before clicking on the New .DEF file button. If you regret anything, there are two chances to break off the action: in the message box, a button lets you cancel. From the file selector, you can also cancel.

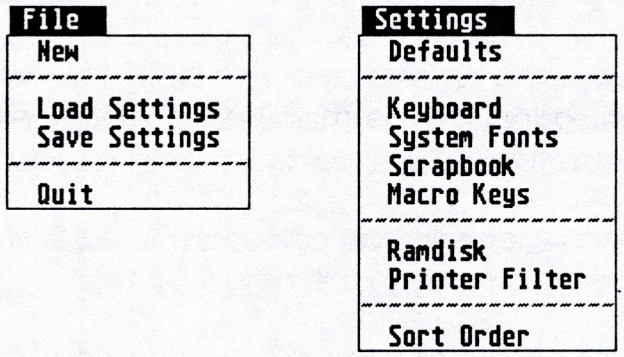
Configuration

Summary

- The Configuration Program sets up your Harlekin to your system.
- You can change many of the Harlekin modules here.
- You can also change the ST keyboard and system font.

Start the configuration program by double-clicking on the **CONFIG.PRG** icon (or click once on it so that it becomes selected and then use the **Open** option from the desktop.)

The File Menu



The configuration program creates a **DEF** file (definition file). If you want to create a new **DEF** file, click on **New**. If you want to change a **DEF** file, select **Load Settings**. This loads a previously created settings file. To save your changes, click on **Save Settings**. **Quit** lets you exit from the configuration program.

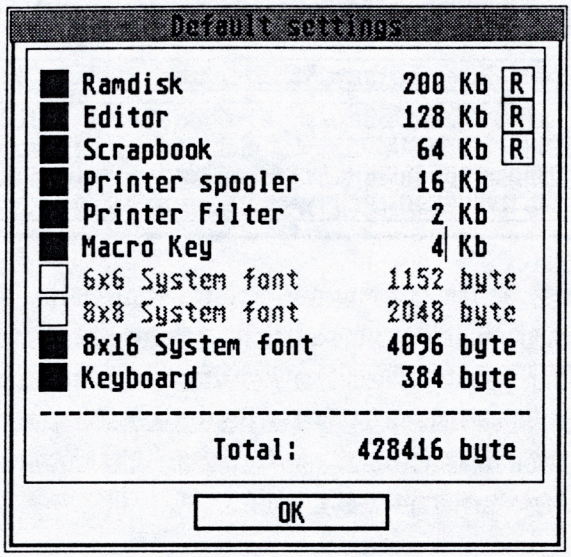
You must save your changes before quitting. The **DEF** file will contain information on how much memory space there must be allocated for each module. It will also contain information on your keyboard layout, macros etc. In the various windows you can also save this information in separate files, but this is only necessary if you wish to copy it to another **DEF** file or wish to load such data while you are inside another program.

Harlekin lets you create different **DEF** files for different purposes. Give each of these a different, descriptive name (**ANDREAS.DEF**, **KAREN.DEF**, **RAM.DEF**, **NO_RAM.DEF**, etc.). Your standard setup should be called **HARLEKIN.DEF**; this will be automatically used when you start the ST. The **DEF** files must be kept in the **HARLEKIN** folder.

The Settings Menu

This menu has many selections.

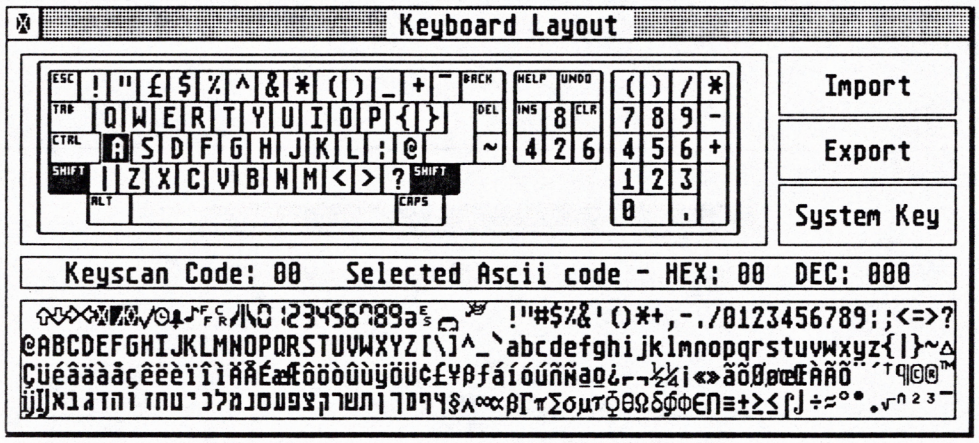
Defaults



This general selection lets you decide whether a module will be active or not, the kilobyte size of the modules, and whether a module will be reset-proof. To activate a module, click on the left box. Write its kilobyte size. Select the **R** button to make it reset-proof. At the bottom, a current total shows you how much RAM space your Harlekin setup will take. You don't need to activate any modules if you don't want to use them.

You must decide how much space you will give to each module. We suggest that you use a low number; if you run out of memory, you can always increase it. The printer spooler should be between 20 to 50 kilobyte. The printer filter should be 3 kilobyte and macros should be 5 kilobyte.

Keyboard



This lets you create your own keyboard layouts. A keyboard layout defines which keys should hold which characters. As you might have noticed the keys on your physical keyboard are assigned characters according to what is written on the key tops. In some cases however you would like to alter the layout. What can be altered is the characters *assigned* to each key on the keyboard.

In your computer a table is stored that holds ASCII numbers of characters. When a key is pressed the computer will look at which character is assigned to the key in this table. In fact there are 3 different tables. One table is used in normal un-shifted mode, another table is used when the **Shift** is pressed, and a third is used if **Caps Lock** is activated.

You don't need to have the same character in both lower case and upper case on the same key. You can have the **e** on the **A** key and the **E** on the **n** key. No problem! But it is confusing.

This means that keys which aren't used in the shift or capslock mode can be used for other things. The numeric keypad is never used in shift or capslock. This is fifteen keys which can hold an additional 30 characters in two modes. Foreign characters, percentages, etc. can be placed here.

Using the keyboard layout editor: select the item **Keyboard** in the **Settings** menu. A window will be opened showing you the current keyboard layout. Click on **System Key** to load the default keyboard. You can also load other keyboards from disk by clicking **Import**; your Harlekin disk has several keyboards: German, USA, Danish, Swedish, etc.

Press the **Shift** key to view the shift keyboard.

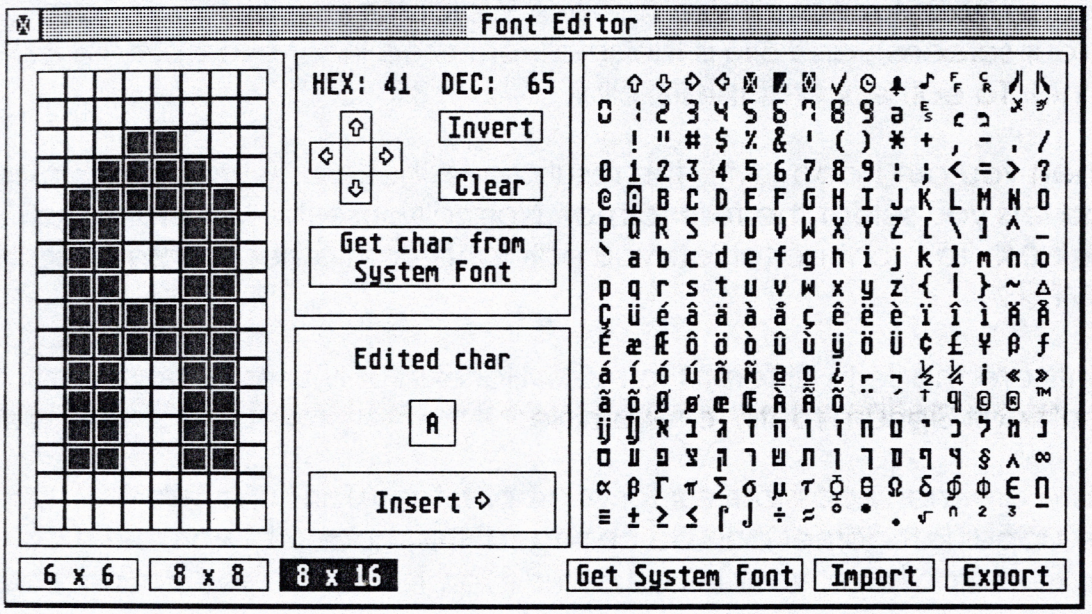
Press the CapsLock to see the "capitals locked" keyboard.

To change a key, click on the key from the keyboard. It turns black. A line reports on its key scan, decimal, and hex values. Click on the character from the ASCII table in the lower window. It replaces the key character. Continue with this to replace or move your keys. When you finish, save the keyboard with a new name: ANDREAS.KEY, say. When you save and exit from the configuration program, the current keyboard is saved into the DEF file.

If you make a mistake, reload the keyboard or click System Key.

You should use the extension .KEY for the keyboards. You can of course use anything you like.

System Fonts



The System Font Editor lets you create your own system font. This changes the appearances of the characters on the screen. The ST's system font is the collection of characters which are used in almost all programs. Altering it, will influence what you see on screen, in other programs as well as in Harlekin.

On the right is the current system font; on the left is a font editor window.

First, you either load the ST's system font (click on the **Get System Font** button) or load a system font from the Harlekin disk (e.g. **MAC_16.FNT** is a Macintosh font in 8 X 16 size). The font is displayed in the window. Click once on a character; its hexadecimal and decimal values are shown at the top. Double-click on the character; it will be shown in the editor window. By clicking or holding down the mouse in the editor window, you can change the character. As you draw, the **Edited char** window shows the new character.

Click once or press the mouse down. It is easier to draw if you turn off any mouse accelerators. Use the arrows to move the character; **Invert** flips the black to white and vice versa field; **Clear** erases everything. If you make a mess of it, click **Get Char From System Font**; this gives you a new copy. When you are happy with the result, click **Insert**; the character is placed into the system collection.

A font is made up of three sizes: 8x16 is the normal size (used in the menus), 8x8 is medium size (used in Wordplus in graphics mode, or on colour screens), and 6x6 is the small font used in for example the control panel. To edit each of these, click on 6x6, 8x8, or 8x16 respectively.

When you are happy with the result, save the font. A window comes up and lets you select the font format. Normally, use the Harlekin setup. Just click **OK**. The font editor lets you edit fonts from other programs such as TEMPUS.

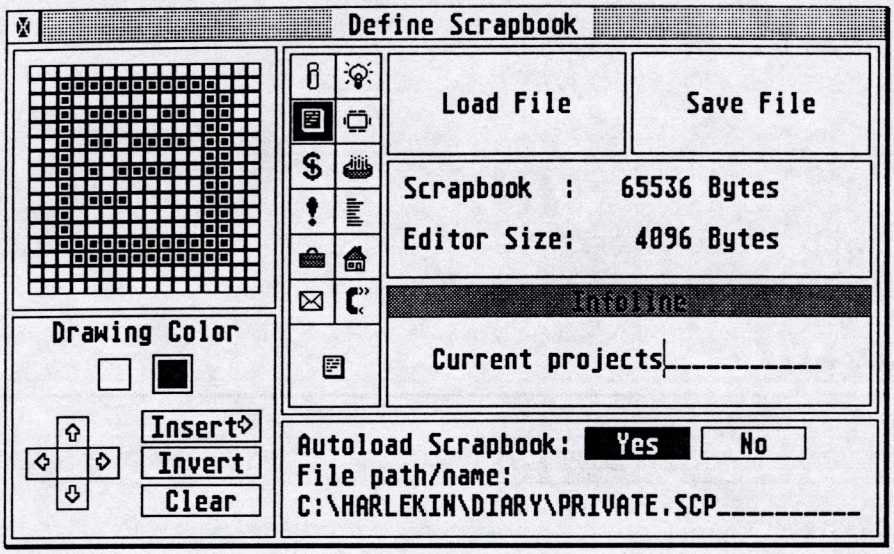
Fonts are made in different formats. Harlekin only uses certain kinds. You can't edit Signum fonts, for example.

There are many possibilities; for example, the Atari Fuji symbol which is in the upper left corner can be changed. It is made of two parts; you can make a small cat, your initials, whatever. If you use special characters for commands in other programs, you can edit the font so that you have your own characters instead of Greek or Hebrew. By altering the system font you could also create symbols or characters like those used by MS-DOS-compatible PCs to create boxes and frames in your documents.

No matter what you do to a character, the ST sends only the character's hex code to the printer: if you re-draw the Greek alpha (hex 40) into a flower, the printer will still only get notice that it should print a "hex 40"; the printer has its own font collection and from its own font will print a Greek alpha.

You are probably thinking "What if I tell the printer to use a different character?" Good idea! With the printer filter, you can intercept a character from the screen and convert it into another character which is then sent to the printer. Or, if your printer allows, you can upload a font to the printer; it will then print your flowers and hearts.

Scrapbook



This lets you create and change icons for the Scrapbook. First, **Load** a scrapbook file. Scrapbook files have the extension **.SCP**. The current icons appear in the middle. Click on an icon and its **Infoline** text appears. This is the text which appears at the top of your screen in the Scrapbook. Double-click on an icon; it appears in the editor field.

The arrows help you to move the icon. **Invert** inverts the field. **Clear** erases everything. When you have finished changing a character, click **Insert** and it is placed in the icon box.

In the **Scrapbook** line, write the maximum space you want the Scrapbook to use. You can always change this later: so write 20 kilobyte or so; if you run out of space while using the Scrapbook, you can always go to the configuration program and allocate more RAM memory. The Scrapbook's editor can also be specified here. The size of the Scrapbook's editor defines the maximum size of a single note in the scrapbook. Thus if you specify 20 KB for the scrapbook and 5 KB for its editor you can't create notes that are larger than 5 KB but the total amount of all notes can be 20 KB. Write the numbers in kilobytes and press K. Harlekin calculates the correct byte size.

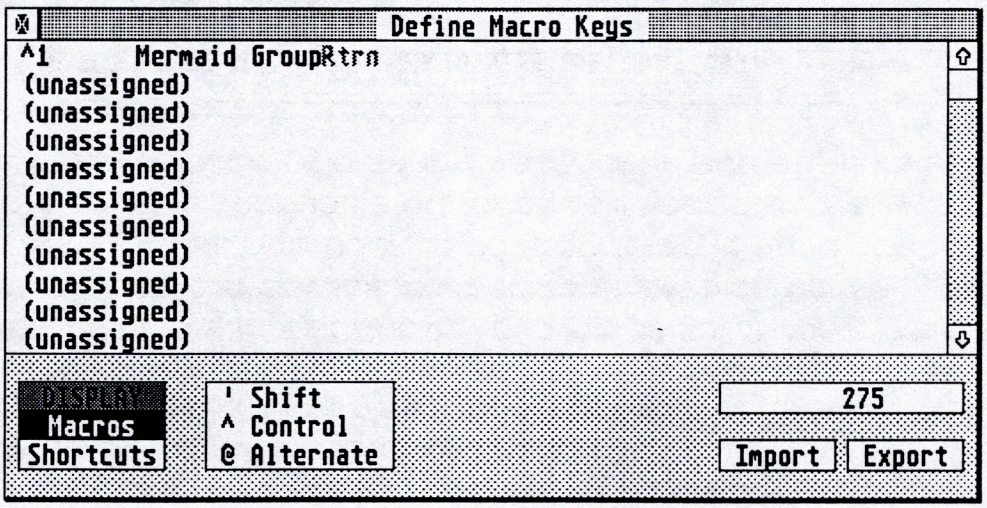
Note that there is a difference in the way the configuration program works with the scrapbook. Unlike all the other modules that can be customised the information of the scrapbook is *not* saved in the **DEF** file. It must be saved in a separate **SCP** file.

To do so click **Save File** and specify a filename wit h the file selector box - it should have the extension **.SCP**.

At the bottom, you can decide if the Scrapbook will be automatically loaded. Click **Yes** or **No**. If **Yes**, then you must write its path: this tells Harlekin where it is going to find the Scrapbook file.

Write the disk drive, folder name, and Scrapbook file name. This could be: **C:\HARLEKIN\ANDREAS.SCP**. Instead of entering the full filename with the keyboard you can point out the file with the file selector. To do so double-click on the entry line.

Macro Keys



This lets you create text macros, command macros (**Macros**), and Harlekin shortcuts (**Shortcuts**). Under **DISPLAY**, you can select either one.

Macros files should have the ending **.MAC**. You could use other endings if you like.

To create a text macro, click on **Unassigned**. A new window appears. Write your text macro; you can use up to 240 characters e.g. you can write your address. After each line, press **Return**; a light grey **Rtrn** appears. When you finish, Click **Key:-**. Press the key combination to which you wish to assign the macro. For example, your address might be on **Alternate** + **A**; whenever you press this combination, your address appears.

You can also make "key press macros." This can be a combination of keyboard commands, such as "Move the cursor ten spaces to the right and then add two returns and delete whatever is there." Click on **Keypress** and press the right cursor arrow ten times, press **Return** twice, and press **Delete**. When you finish, click **Key:-** and assign it to a key combination such as **Control** + **Alternate** + right arrow key.

If you need extra characters, get them from the font table. To delete a text macro, use the **Backspace** key. To erase a key press macro, click **Delete keypress**. When you have finished, click **OK**.

Shortcuts let you assign the Harlekin modules to key-presses. For example, you can press **Control** + **E** and the editor pops up onto the screen. If a macro or shortcut is already active, you will have to disable it (in the macro processor icon, or see **Chapter 8**.)

To do this, click **Shortcuts**. The various Harlekin modules show up as buttons. Click on **Editor** and press the combination to which you will assign it. To erase a key combination, click on a button and press **Return**. This erases the macro.

On the right side are special shortcuts -

AsciiStr: the key that causes the collection of characters from the bottom of the ASCII Table to be inserted into your text editor.

CalcStr: the current result from the calculator will be used. After adding several numbers, you can go to the Scrapbook, make a note on January 10th, press your **CalcStr** macro, and the calculator's result is inserted into the Scrapbook.

DateStr: The current system date is written. When you start a letter, press your macro and today's date is put into the text.

TimeStr: The current system time is written.

Playback and **Record**: these allow you to "tape" a collection of key presses at any time and "play them back". This is a sort of "open" macro. If you are in a program that requires a lot of key presses for repetitive acts, you can create a quick macro without going to the configuration program.

For example, say you use **Control + 5** to "Record" and **Control + 6** to "Playback". In your Wordplus, press **Control + 5** to start recording. Carry out the normal key press commands, such as **Alternate + R** (Replace); write **War**, press the down arrow; write **Peace**; and press **OK**. Press **Control + 5** again to turn off the recording. Press **Control + 6**: the Replace window immediately pops open, the characters are written, and it then goes to the next occurrence of **war** and converts it into **peace**.

The opportunities of this macro are endless. You can record the following: In your wordprocessor, use the *search* option to find a word, press the down arrow twice and press the *delete line* key and write a new line. Simply by pressing the playback key, you can hop through a document, deleting the second line every time. Or, in SUPERBASE, you can record a long series of key-presses to carry out a search.

The last two special shortcuts are especially for Mega ST users: you can assign a **WarmBoot** (reset) or **ColdBoot** to keys. You should use a two hand combination for these: We suggest **Alternate + Shift + Control + Backspace** for a warm boot; **Alternate + Shift + Control + Undo** for a cold boot. A cold boot wipes out the entire memory, including reset-proof Harlekin modules!

Many programs now use keyboard commands for their menus. Most of these are "**Control** + a key" or "**Alternate** + a key." To avoid any conflicts, you should use combinations such as "**Shift + Control** + a key" for your macros.

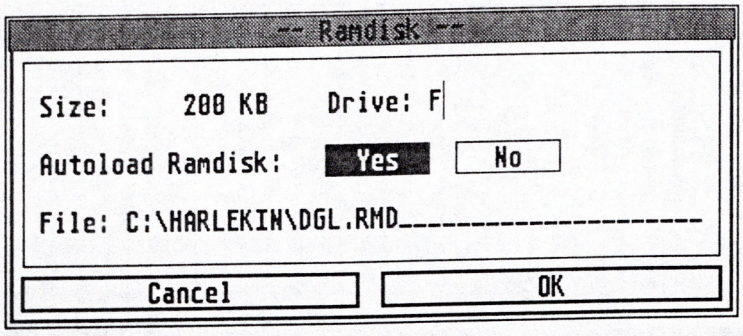
Use keys which remind you of the command e.g. use **E** for the editor, not **Y**.

It may help you to re-read **Chapter 5, ASCII Table**.

Important: Turn off the macros (click on the macro processor icon in the main Harlekin window) before changing macros in the configuration program. Otherwise, you won't be able to re-assign keys; the old macro will conflict with the new macro.

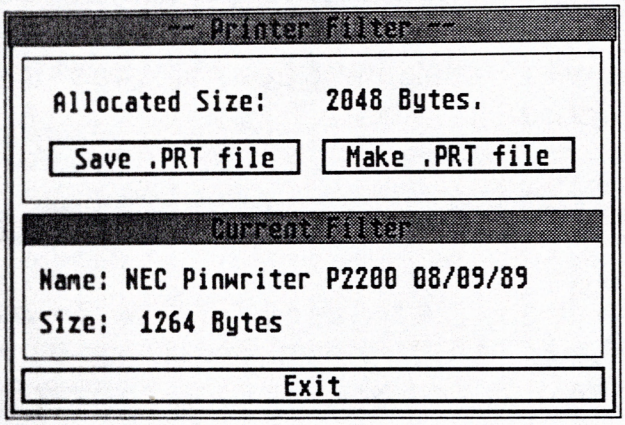
Problems: Le Redacteur uses its own macro system and this conflicts with Harlekin. The Harlekin macros become inactive.

RAM disk



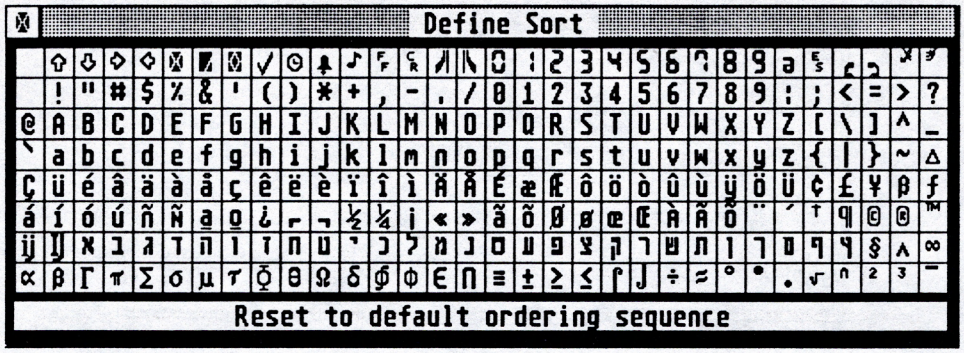
This option lets you define the Harlekin RAM disk. In **Chapter 11**, there was a description of RAM disks. Add here the drive icon which your RAM disk will use. If you click `Autoload Ramdisk`, then the RAM disk will automatically load its files when it starts up. You must then write the path in the next line (for example, `A:\HARLEKIN\RAM.RMD`). The RAM disk file can have any name. The allocated size of the RAM disk is set above in the `Defaults` selection.

Printer Filter



This lets you set up a printer filter. Since printer drivers are a problem for most users, we have designed this to be as simple as possible. Click on `MakePRT file`; a file selector shows up and lets you select the driver for your printer. Click `Save PRT file`; this saves the new driver. The allocated size is set above in the `Defaults` selection.

Sort Order



This lets you lay out the sorting order whenever you use a sort. For example, the sorting selection in the editor will sort the lines out according to the first character. You will notice that **a** follows **Z**, not the **A**. This is due to the ASCII sorting order; computers sort characters according to the ASCII table. You can change this by moving the characters around. Point at the **a**, press and hold down the mouse button and move it onto the **B**. It moves there and all of the characters move over.

This can help you with foreign characters. The German "ô" should be after "O", not "ò." You can place the characters where they should be. Sorting only helps with Harlekin; it does not affect the sorting order in other programs such as Superbase.

Tips and Tricks

You can make as many **DEF** files as you like. One can be for you, another one for your girlfriend etc.. You can make **DEF** files for different programs. Be sure to make a backup of your original **DEF** file first (call it **BACKUP.DEF**); then if you ruin your original, just load the backup.